

FIG. 1A

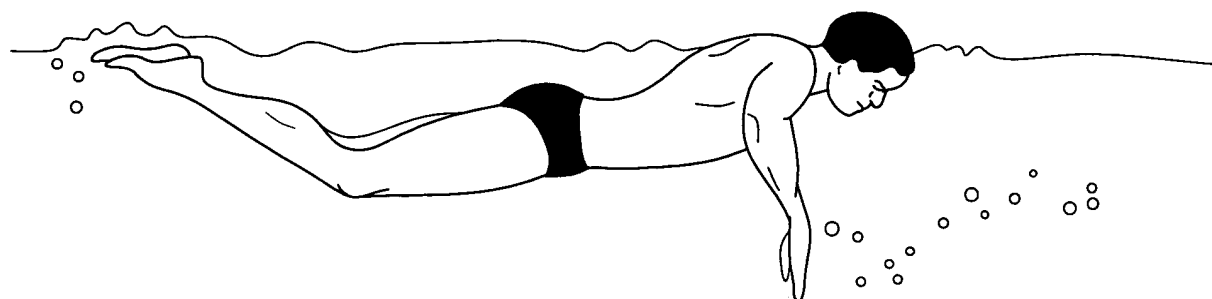


FIG. 1B

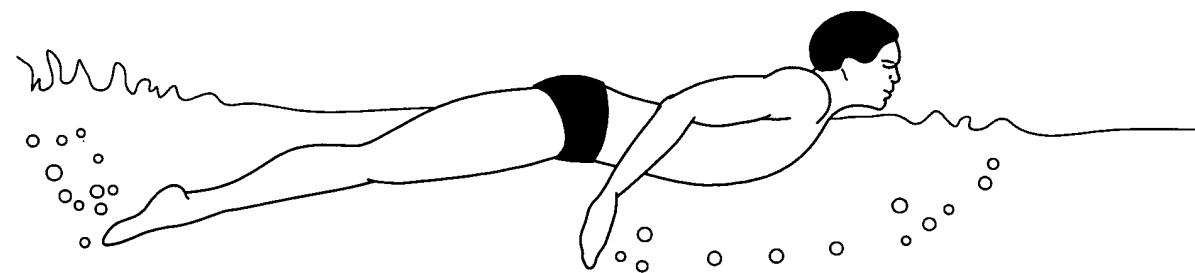


FIG. 1C

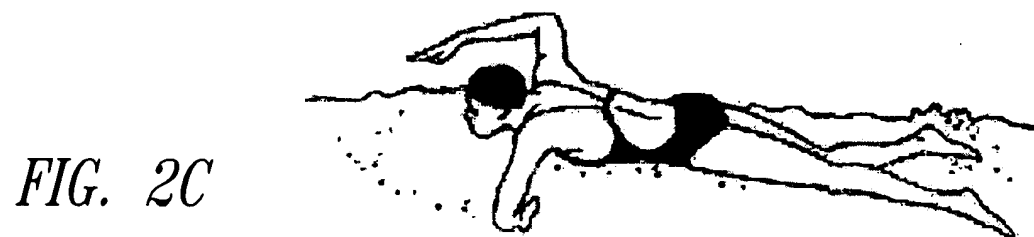
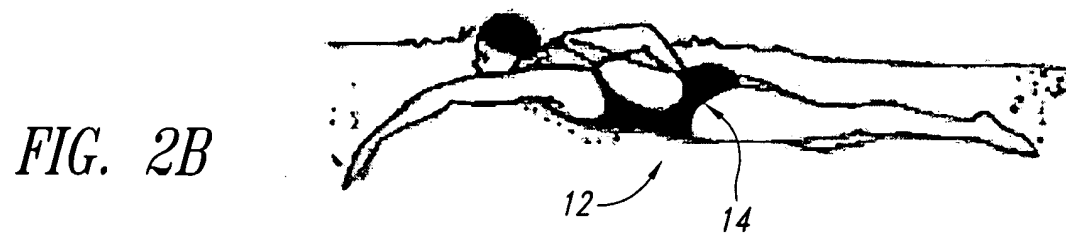
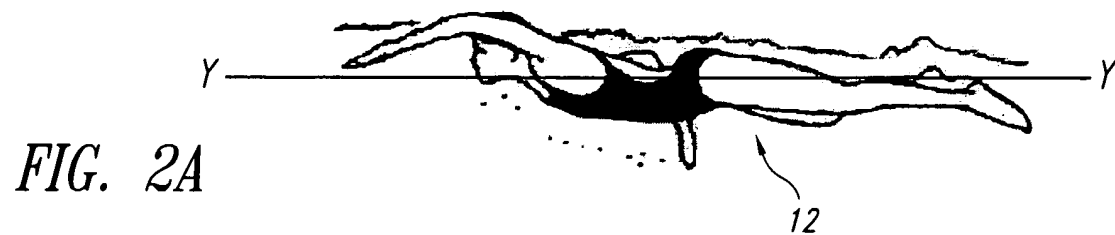


FIG. 2F

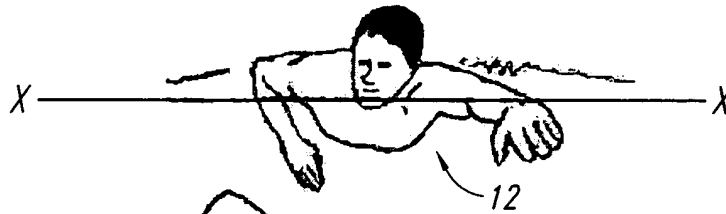


FIG. 2G

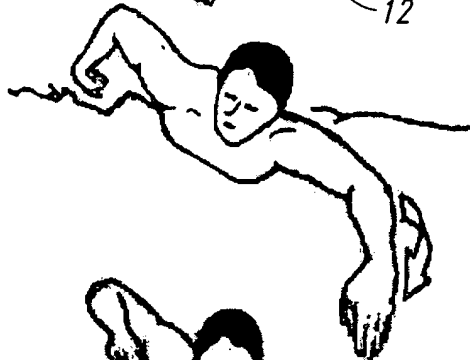


FIG. 2H

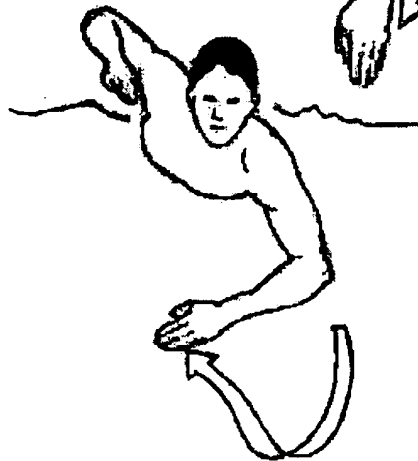
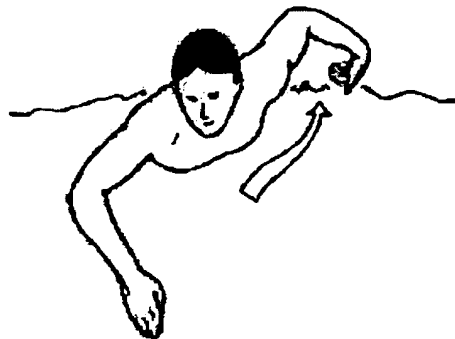


FIG. 2I



FIG. 2J



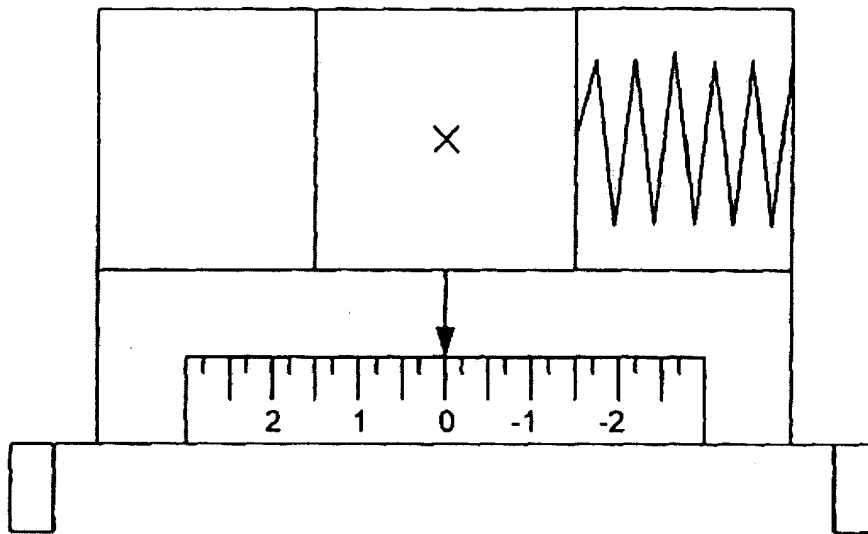


FIG. 3 The accelerometer is not submitted to elongation or compression forces.

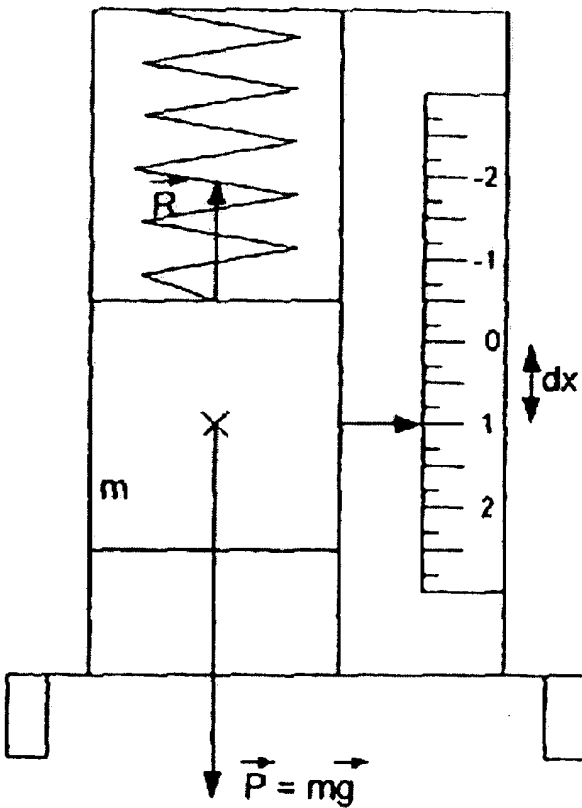


FIG. 4 The accelerometer is submitted to the force of gravity (static acceleration)

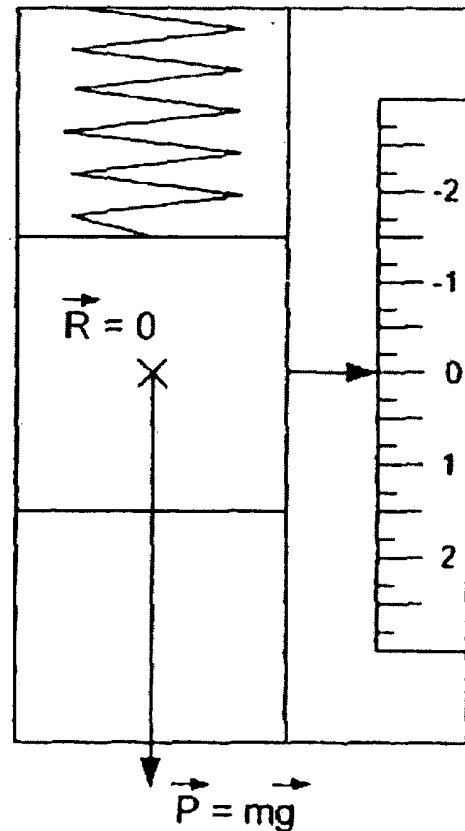


FIG. 5 System in free fall

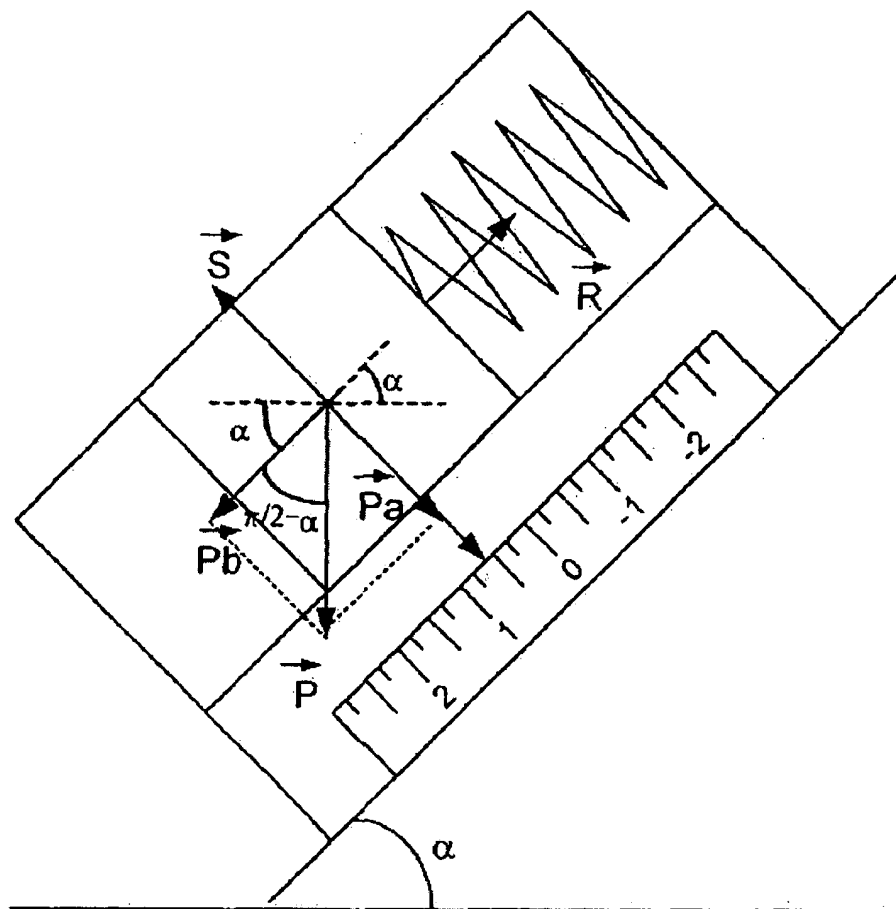
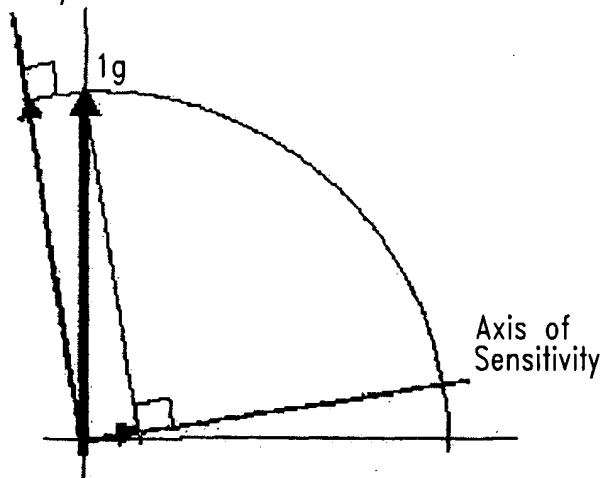


FIG. 6 Accelerometer laying at an angle

Axis of
Sensitivity



Angle α	Sinus α	$\Delta\alpha$
0	0.00	
10	0.17	0.17
20	0.34	0.17
30	0.50	0.16
40	0.64	0.14
50	0.77	0.13
60	0.87	0.10
70	0.94	0.07
80	0.98	0.04
90	1	0.02

FIG. 7 Axes of sensitivity

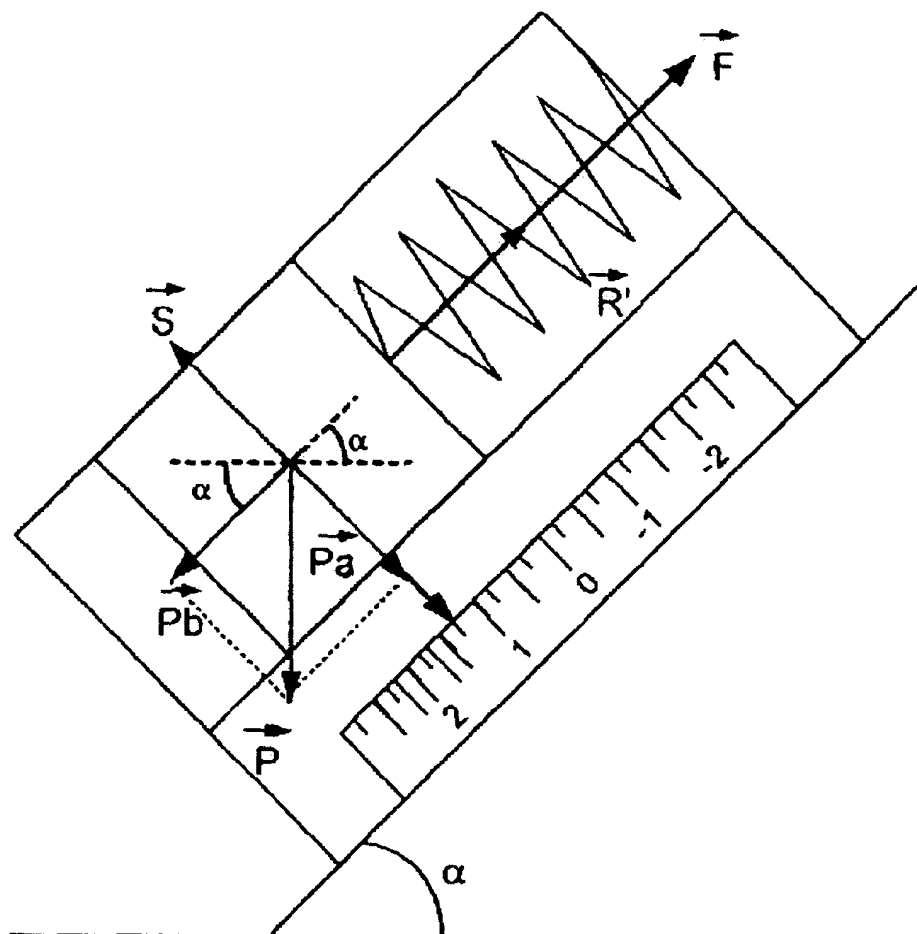


FIG. 8 Dynamic acceleration applied to the system

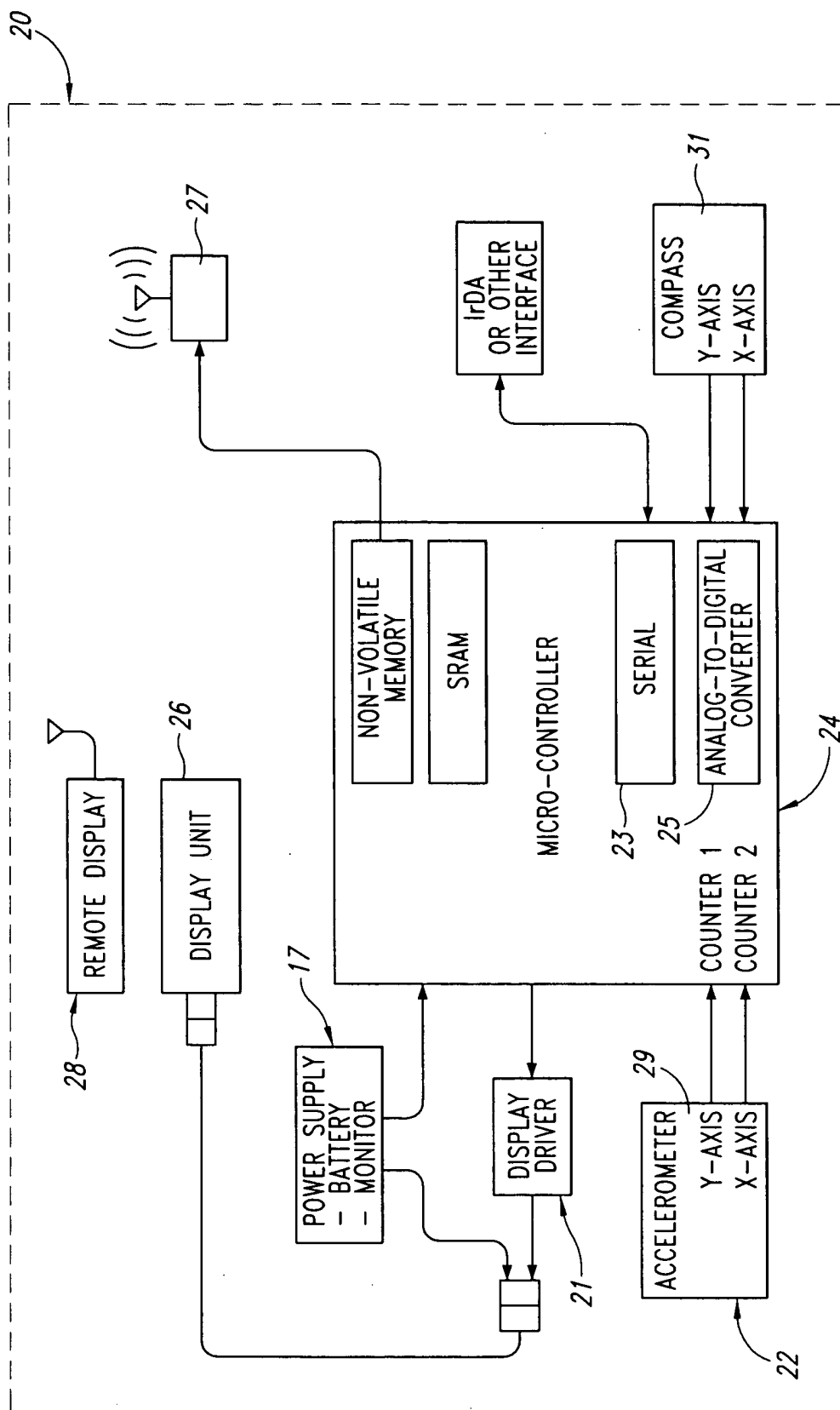


FIG. 9

BUTTERFLY

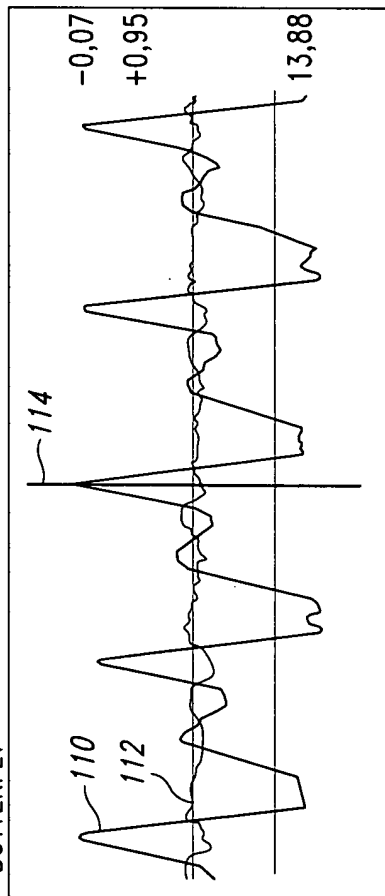


FIG. 11A

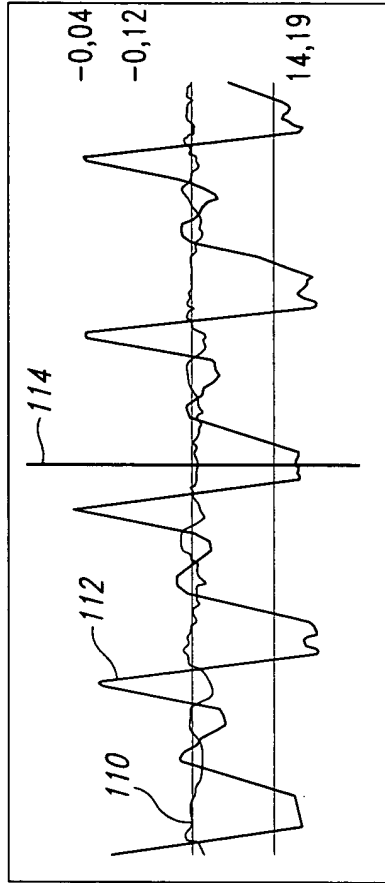


FIG. 11B

BREASTSTROKE

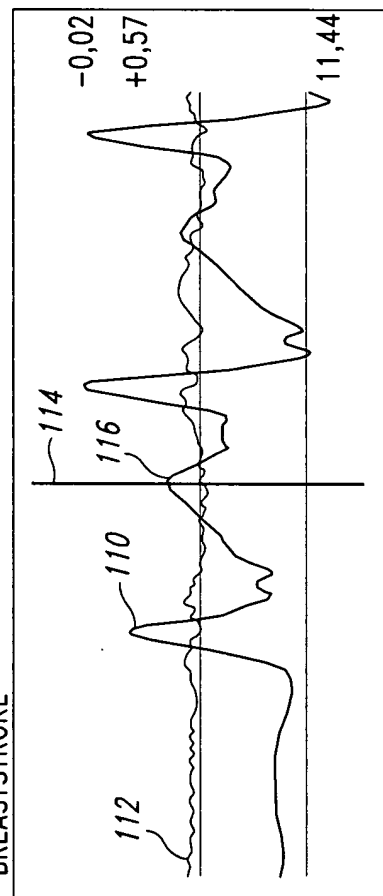


FIG. 12A

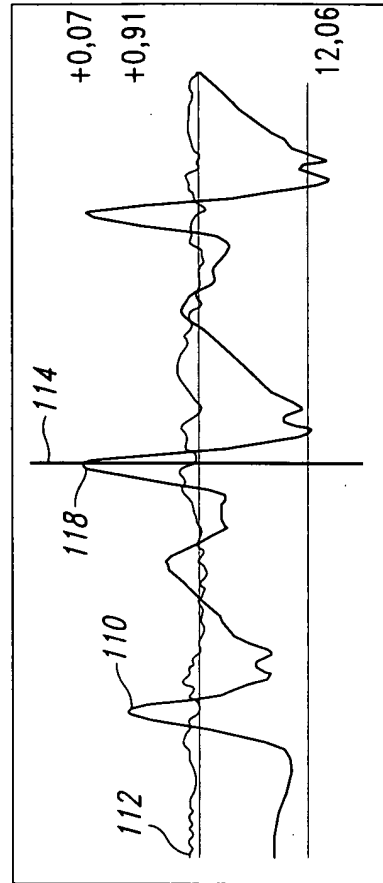


FIG. 12B

CRAWL

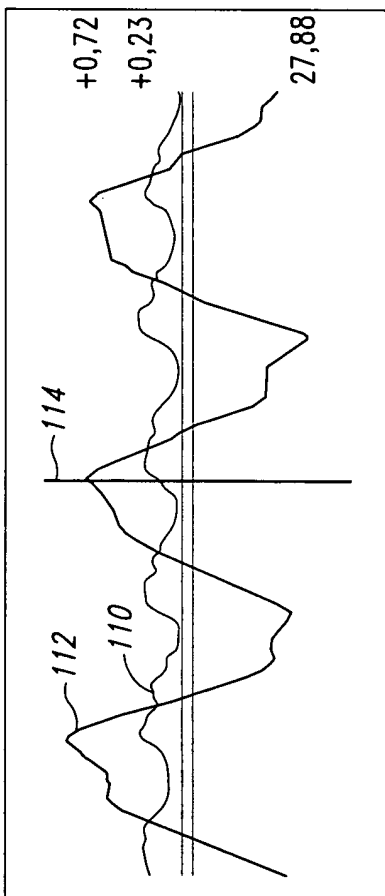


FIG. 13A

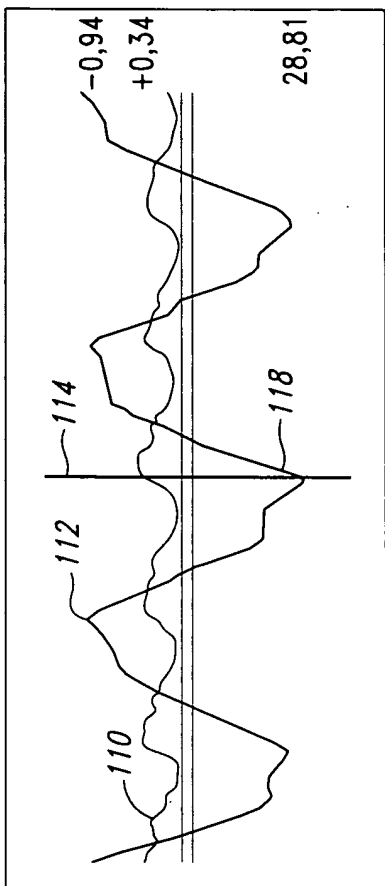


FIG. 13B

BACKSTROKE

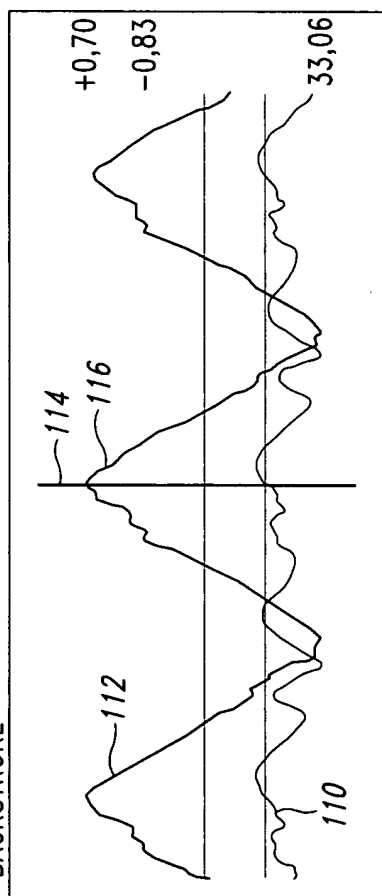


FIG. 14A

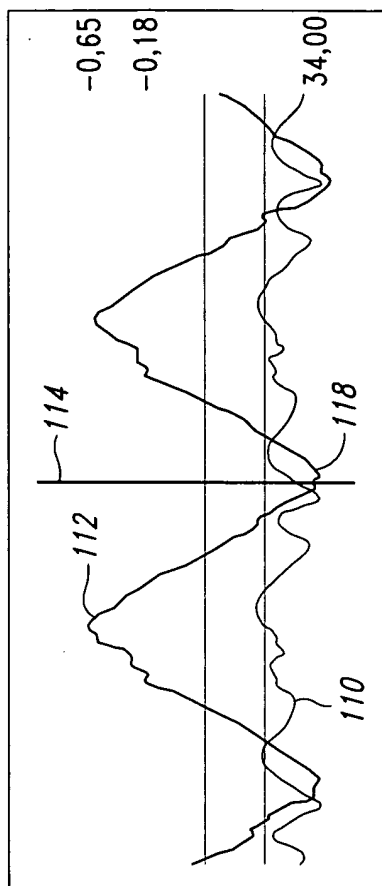


FIG. 14B

STARTS AND TURNS

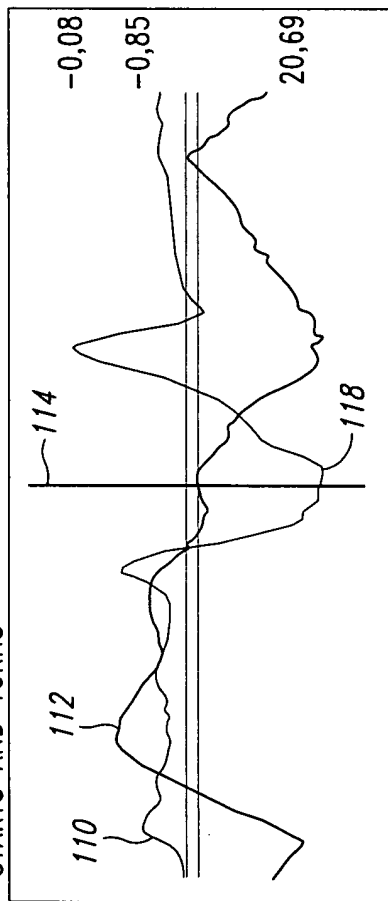


FIG. 15A

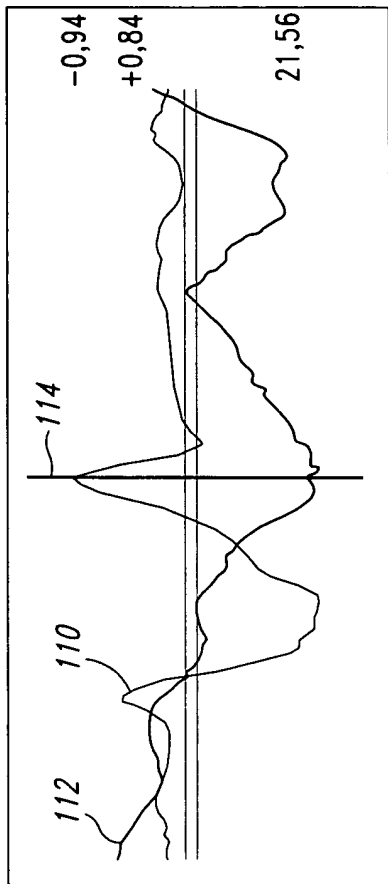


FIG. 15B

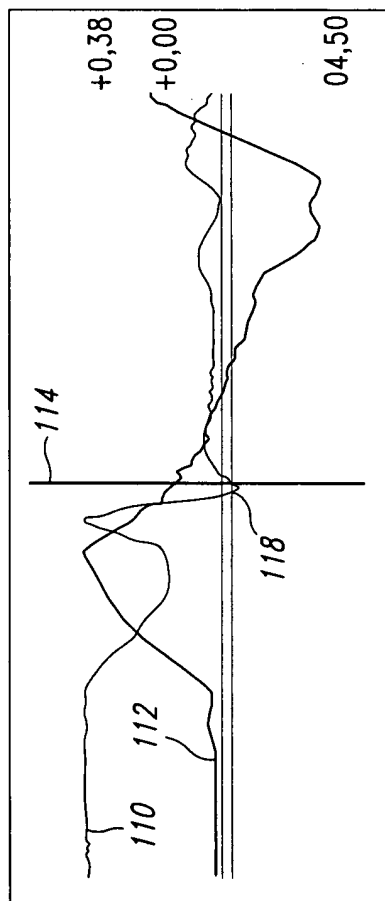


FIG. 16

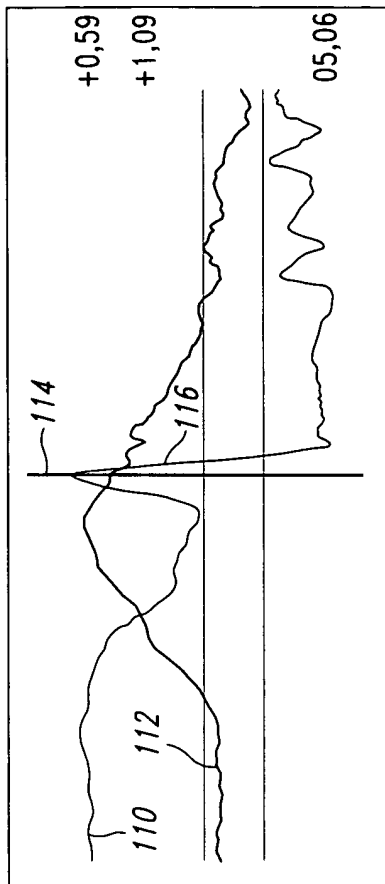


FIG. 17

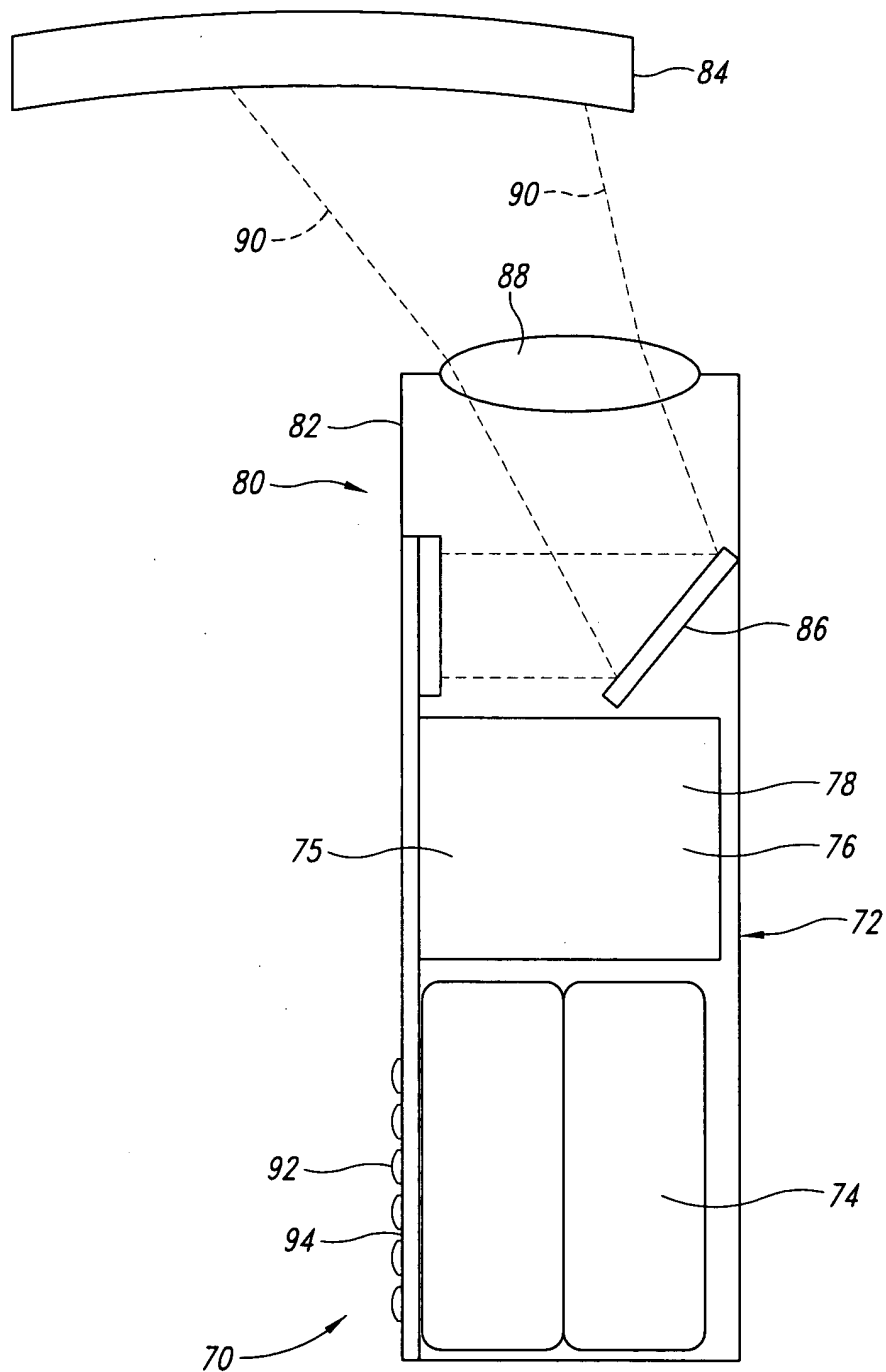


FIG. 18

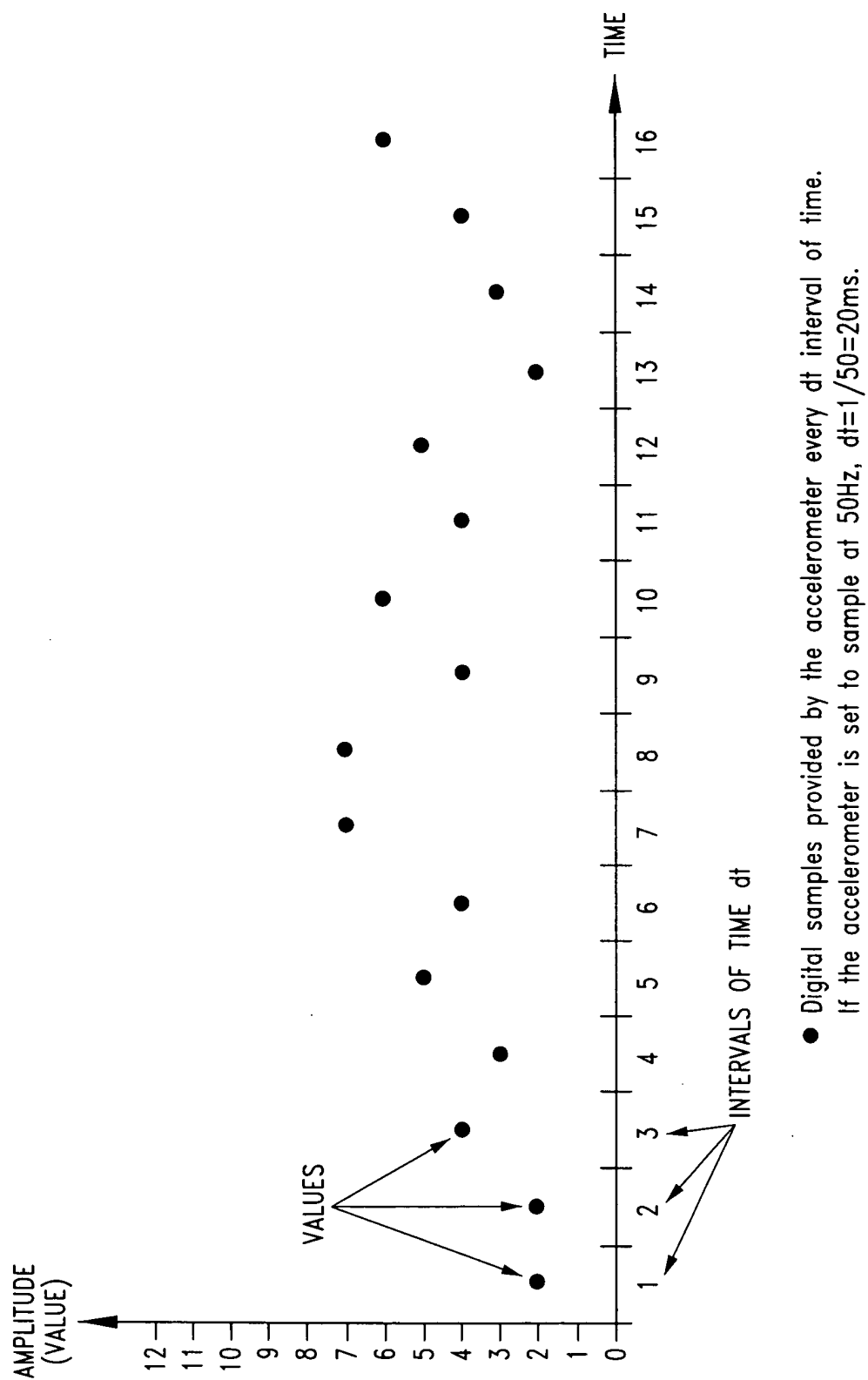


FIG. 19 Example of digital samples captured by the accelerometer at 50Hz.

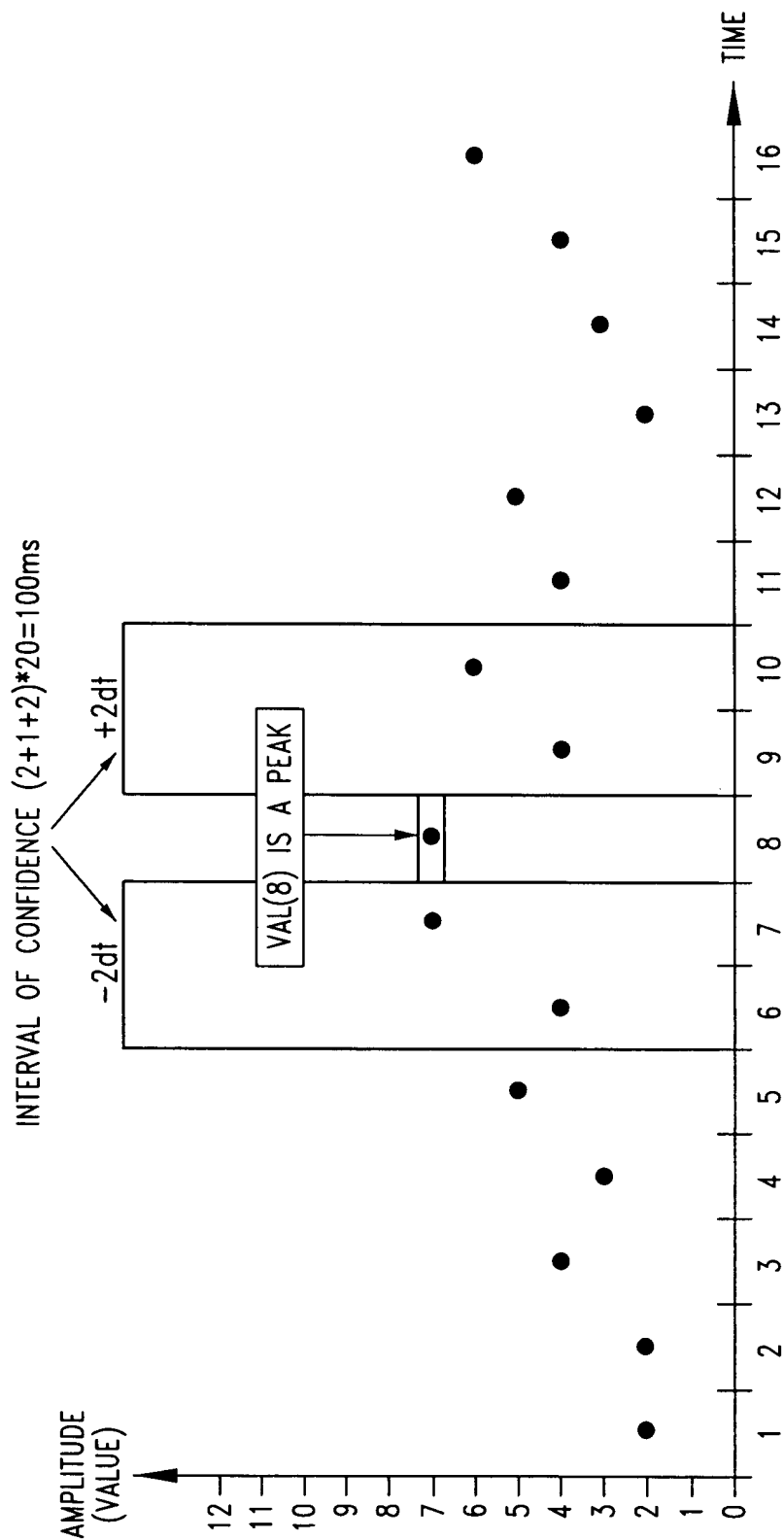


FIG. 20 Illustration of an interval of confidence representing 100ms.
 Sample 8 is a peak centered within an interval of 100ms

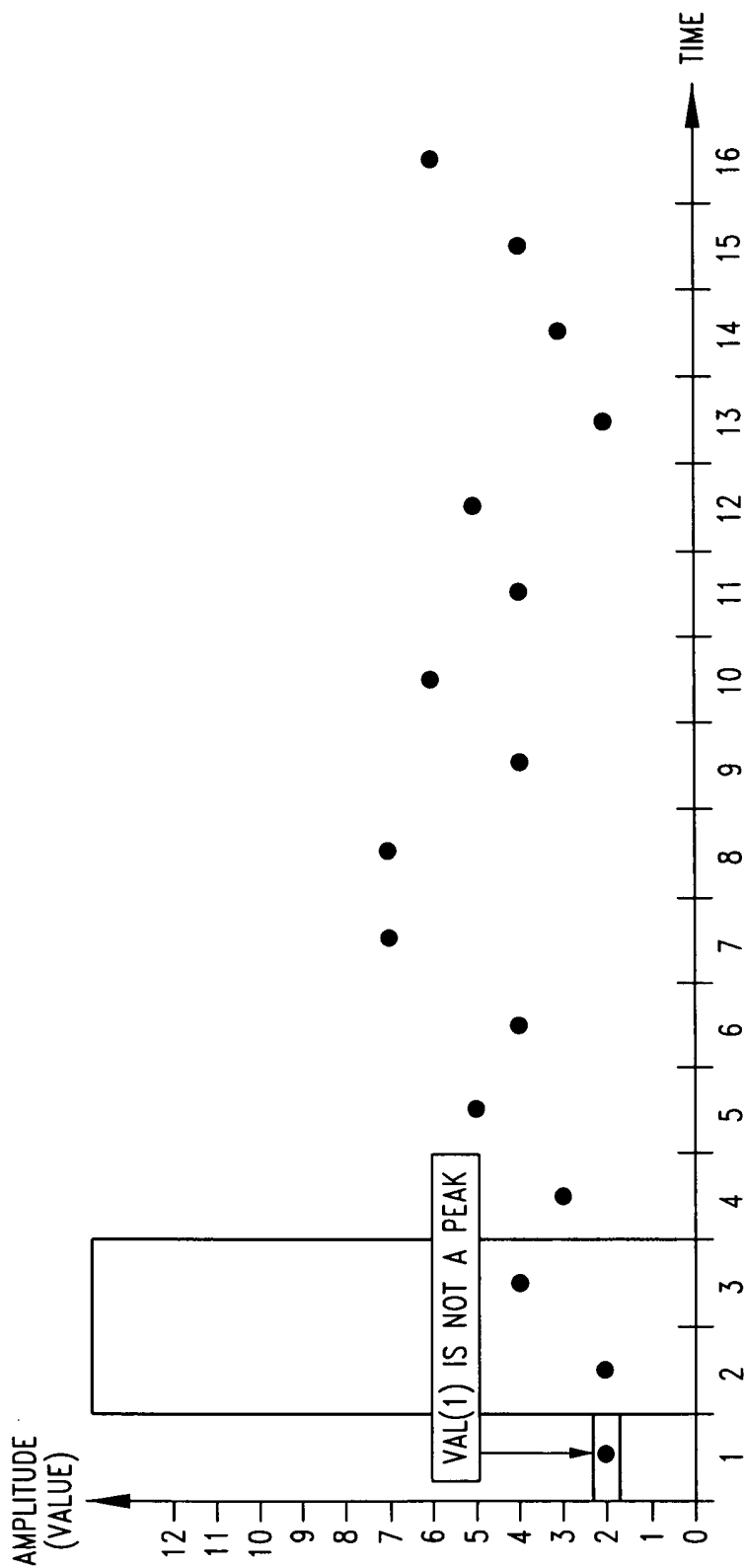


FIG. 21 1st digital sample is compared to its 2 closest neighbors to the right.
 (no data available to the left).

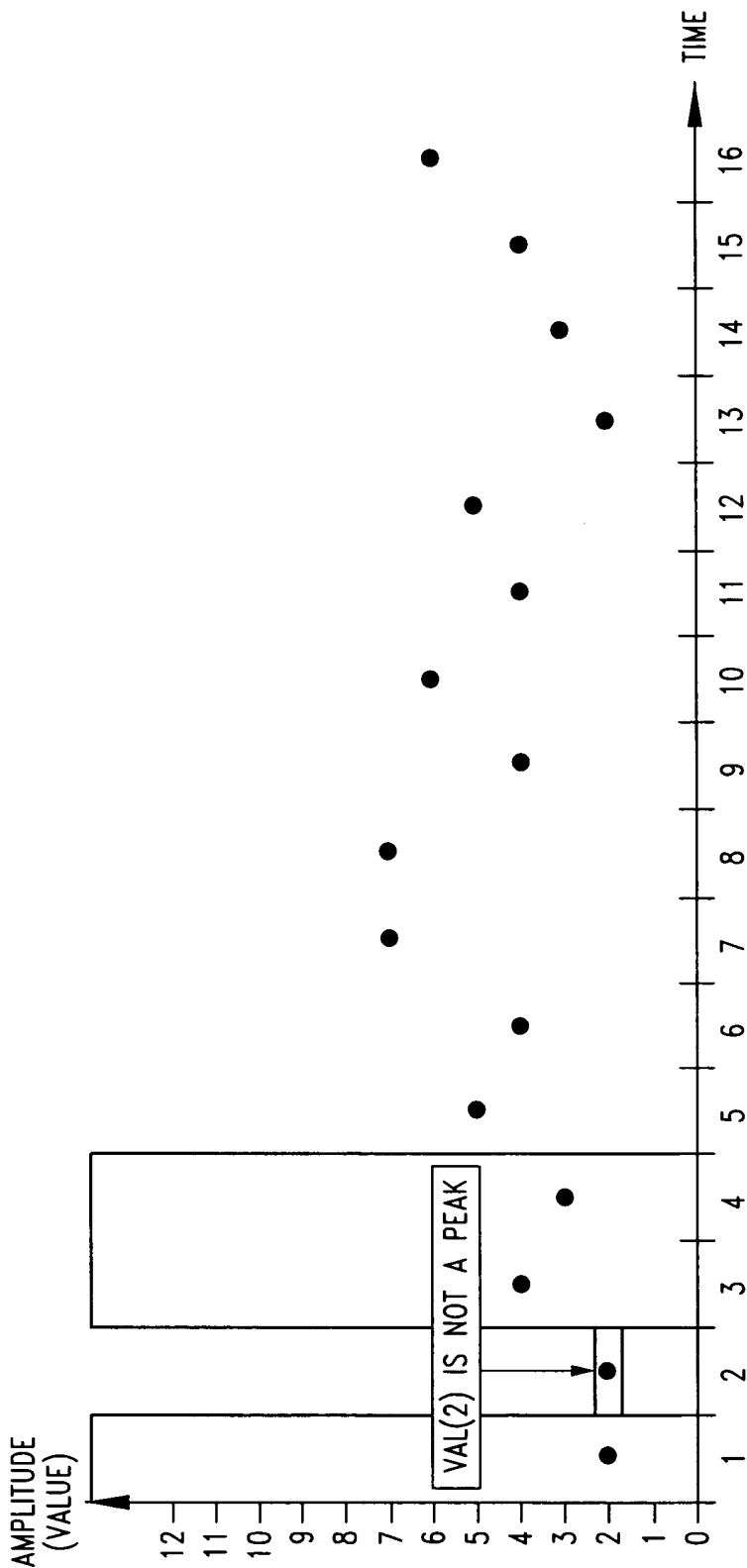


FIG. 22 2nd digital sample is compared to its 2 closest neighbors to the right and unique neighbor to the left.

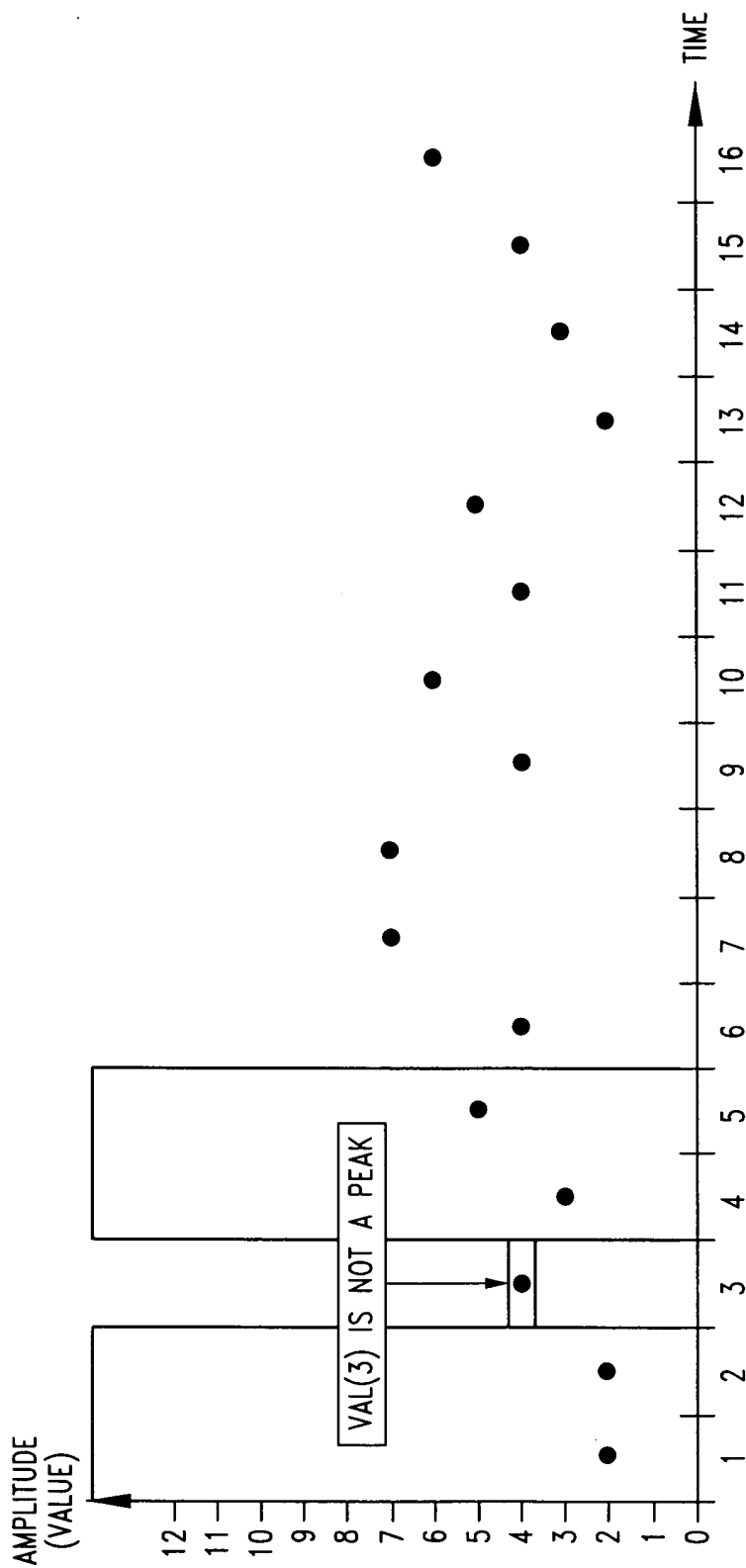


FIG. 23 3rd digital sample is compared to its 2 closest neighbors to the right and left (general situation).

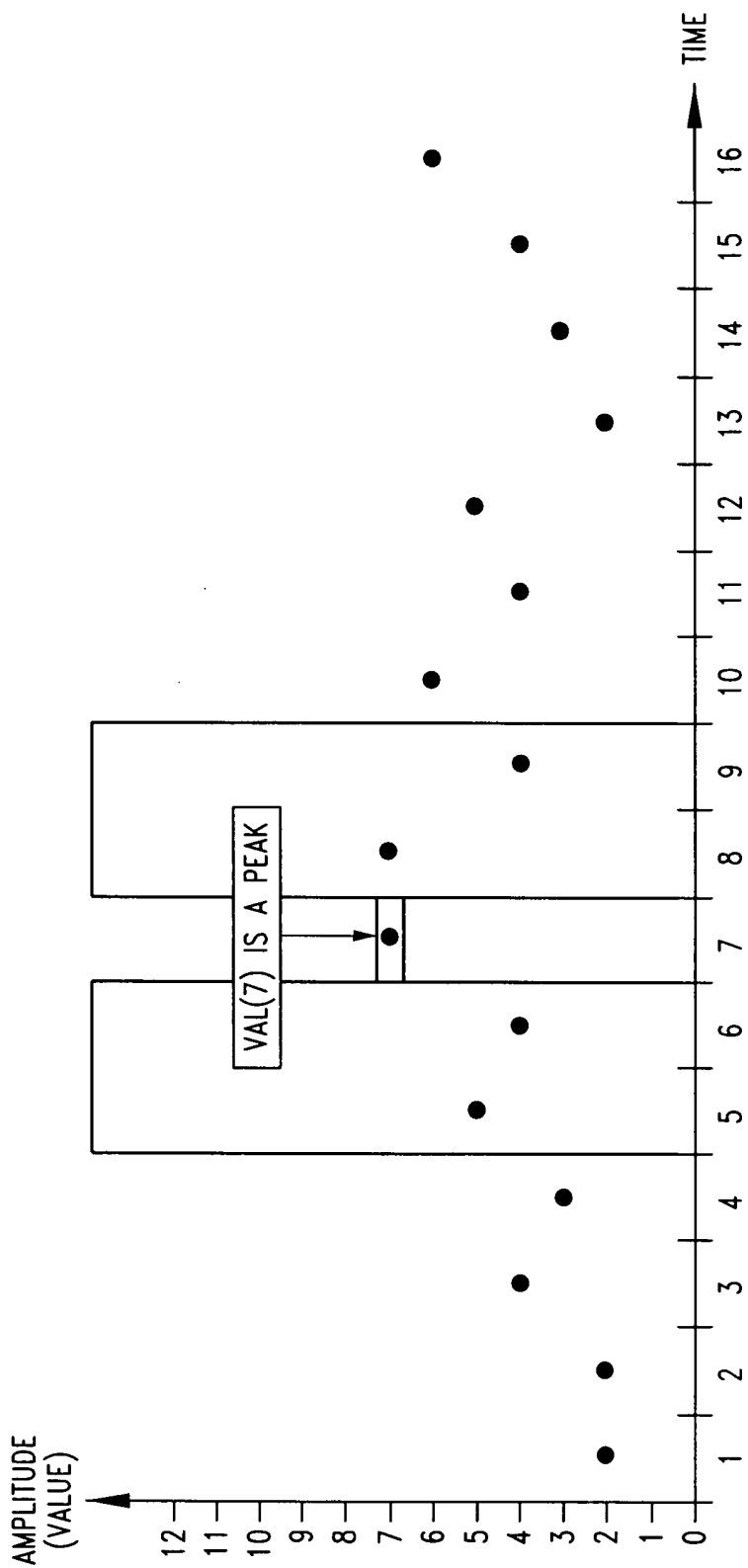


FIG. 24 7th digital sample is a peak.

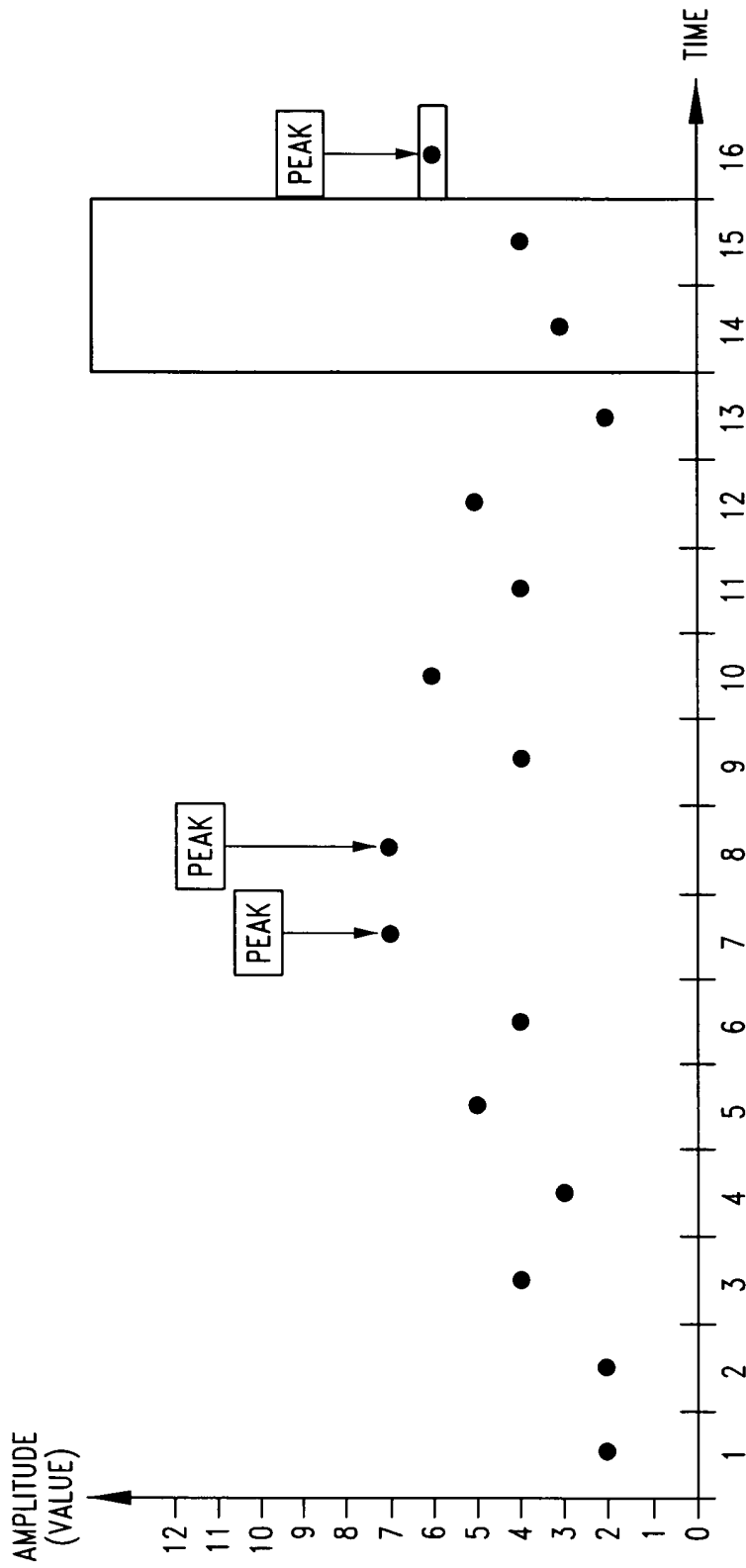


FIG. 25 Last sample is compared to its 2 closest neighbors to the left.
A total of three peaks were detected by the system.

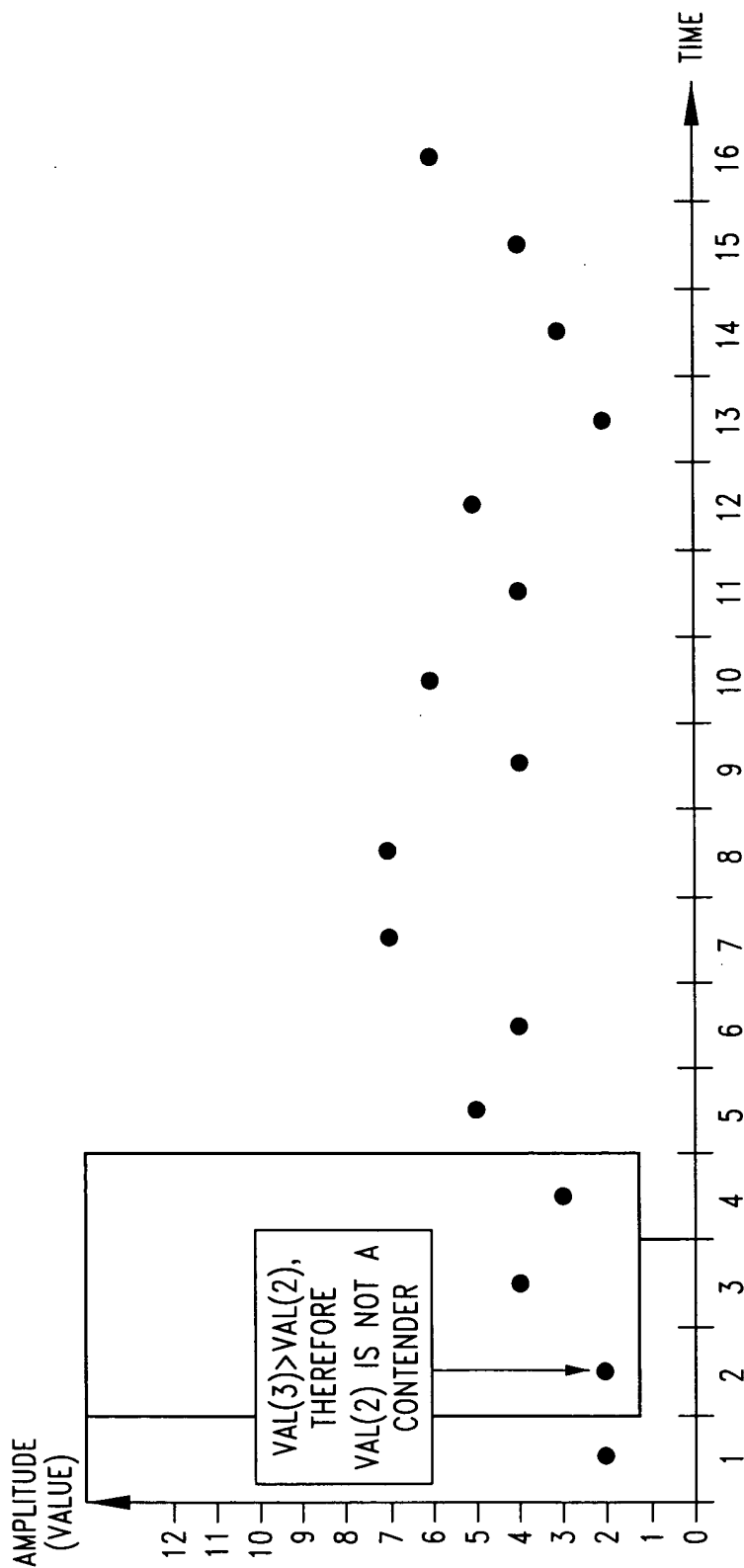


FIG. 26 Digital sample 2 is compared to its immediate neighbors to the right and to the left.

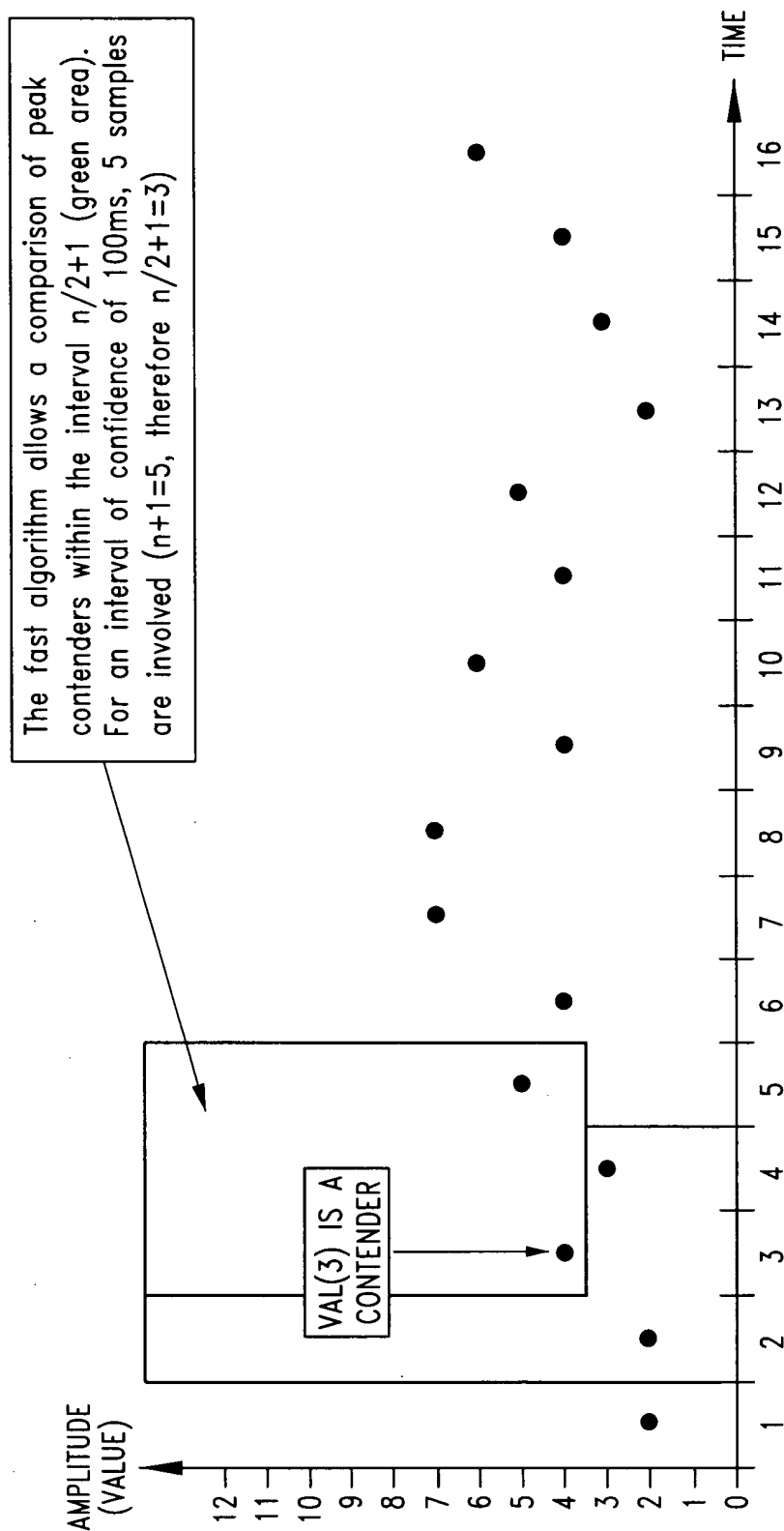


FIG. 27

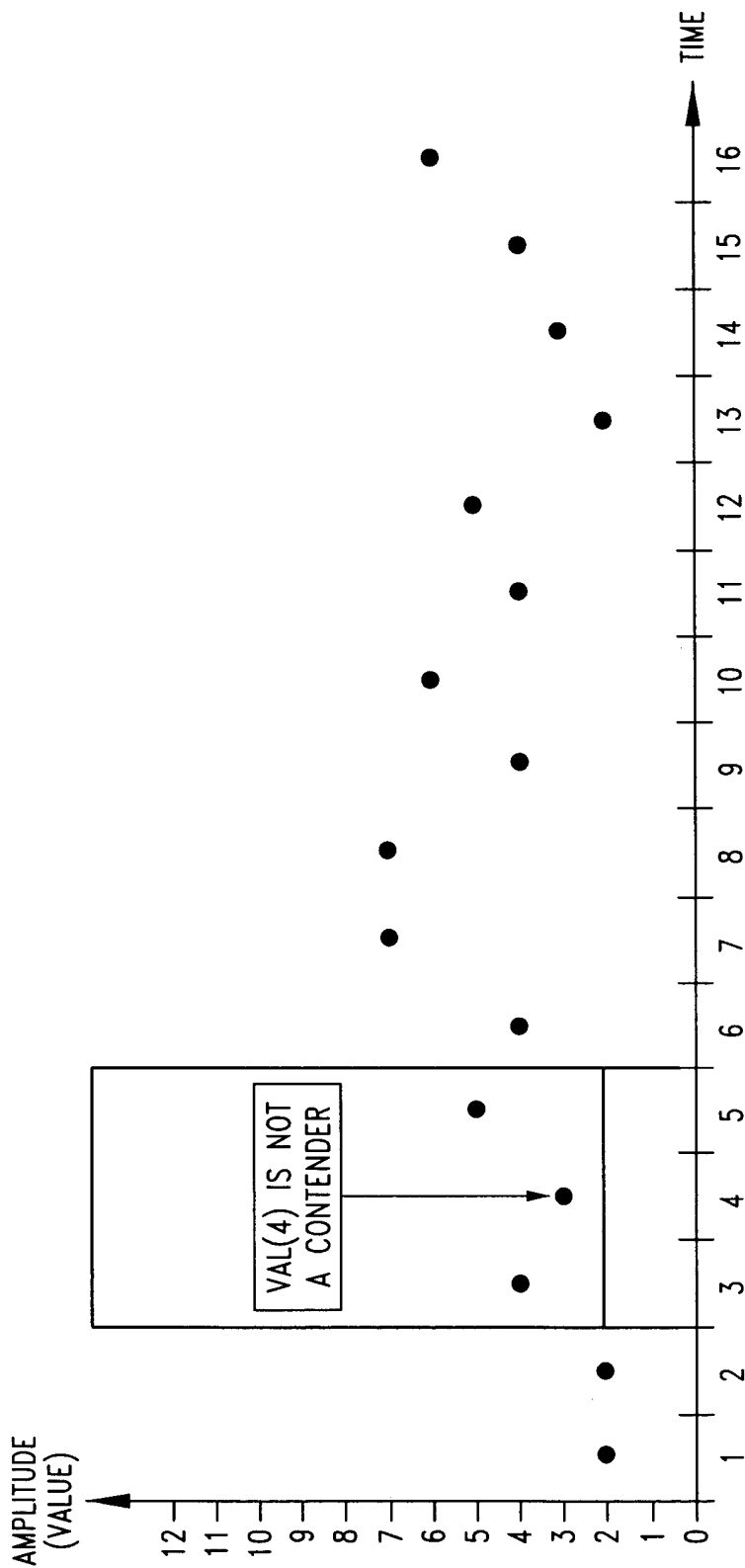


FIG. 28

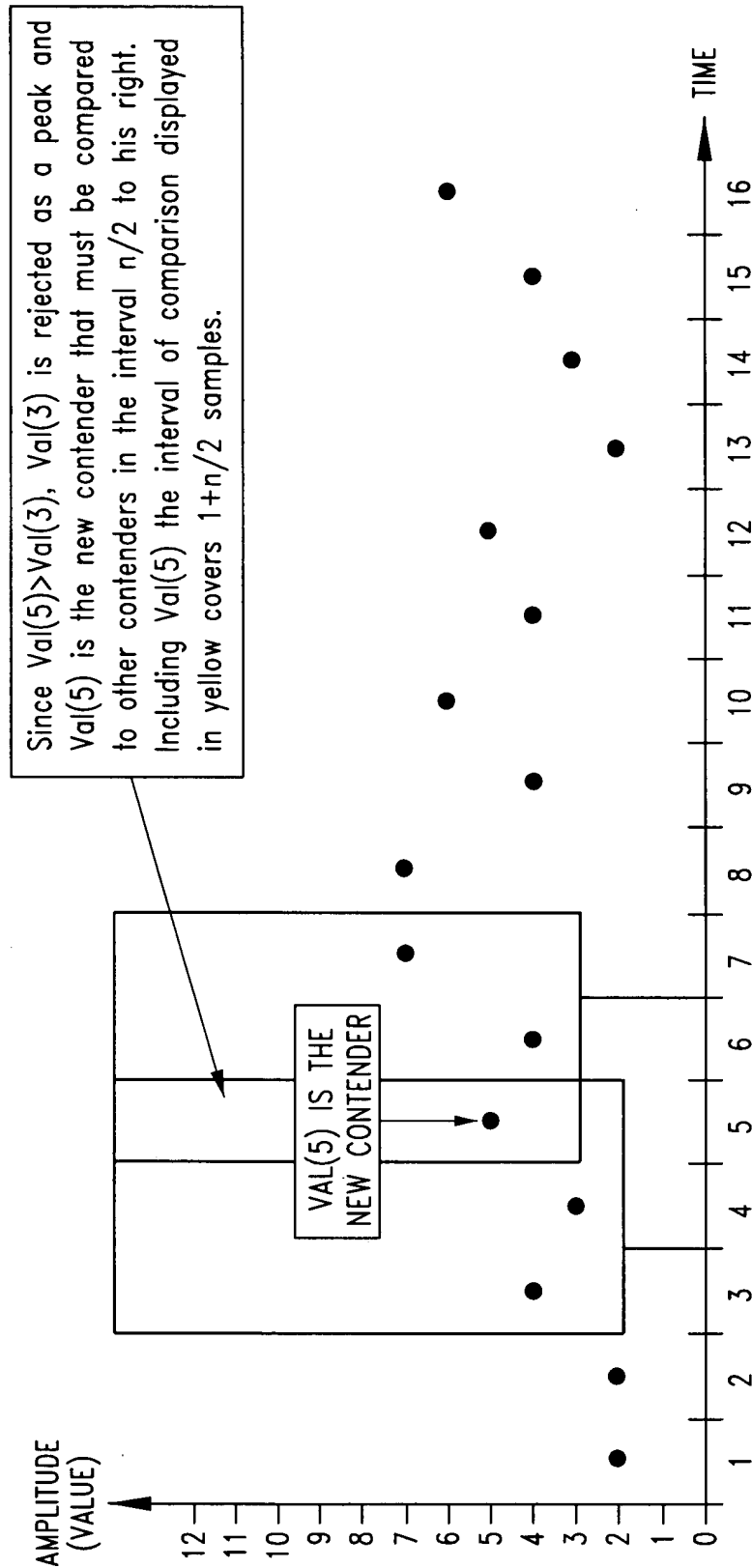


FIG. 29

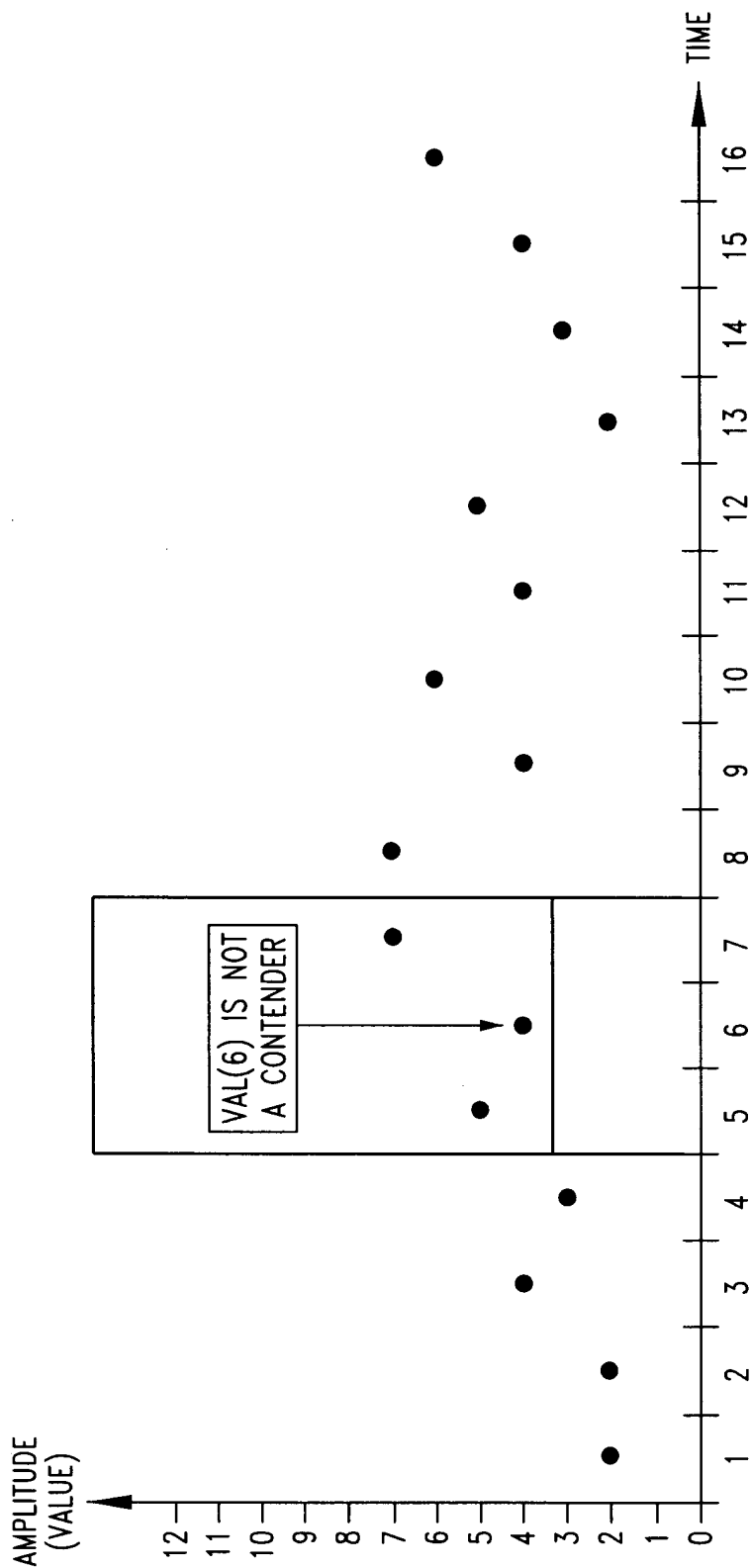


FIG. 30

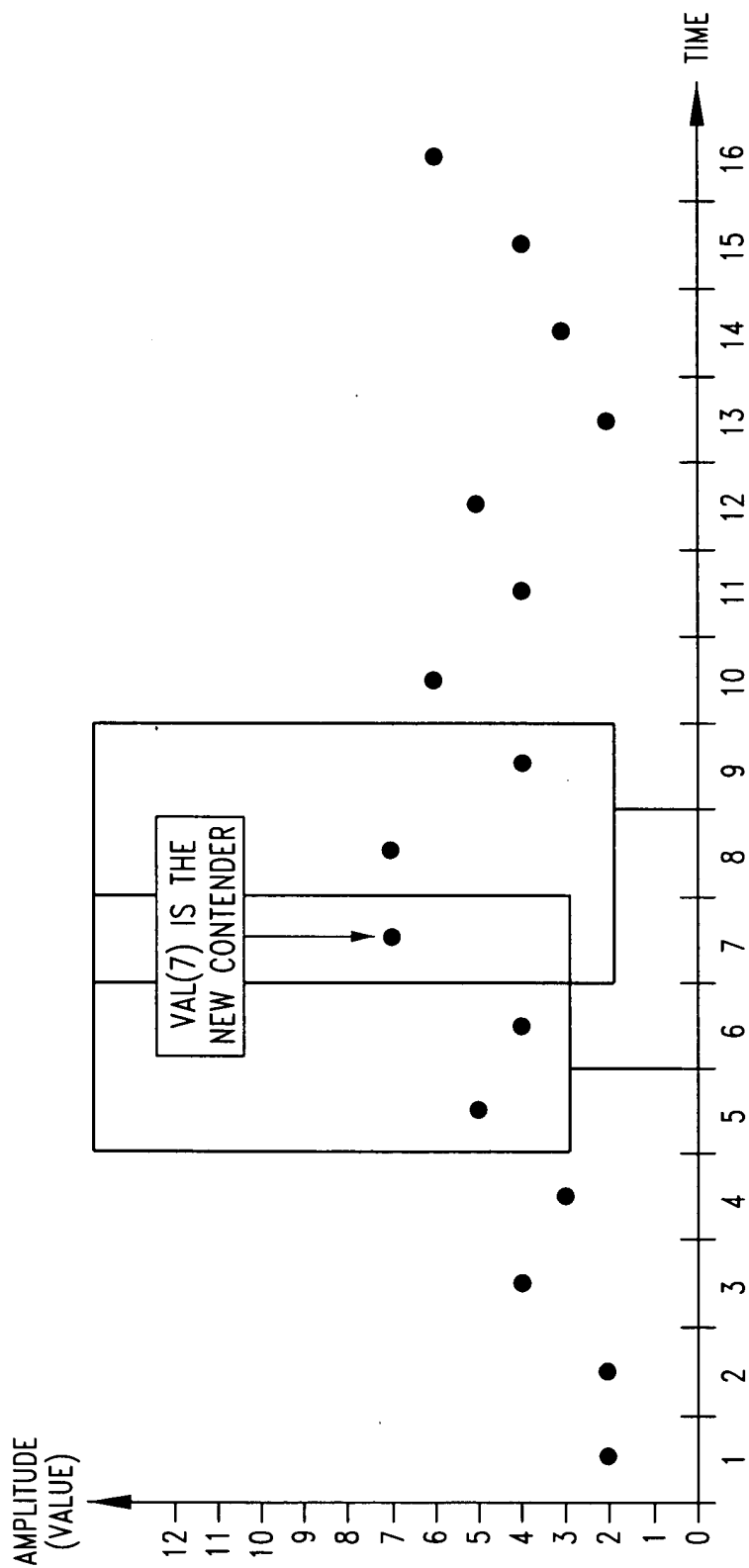


FIG. 31

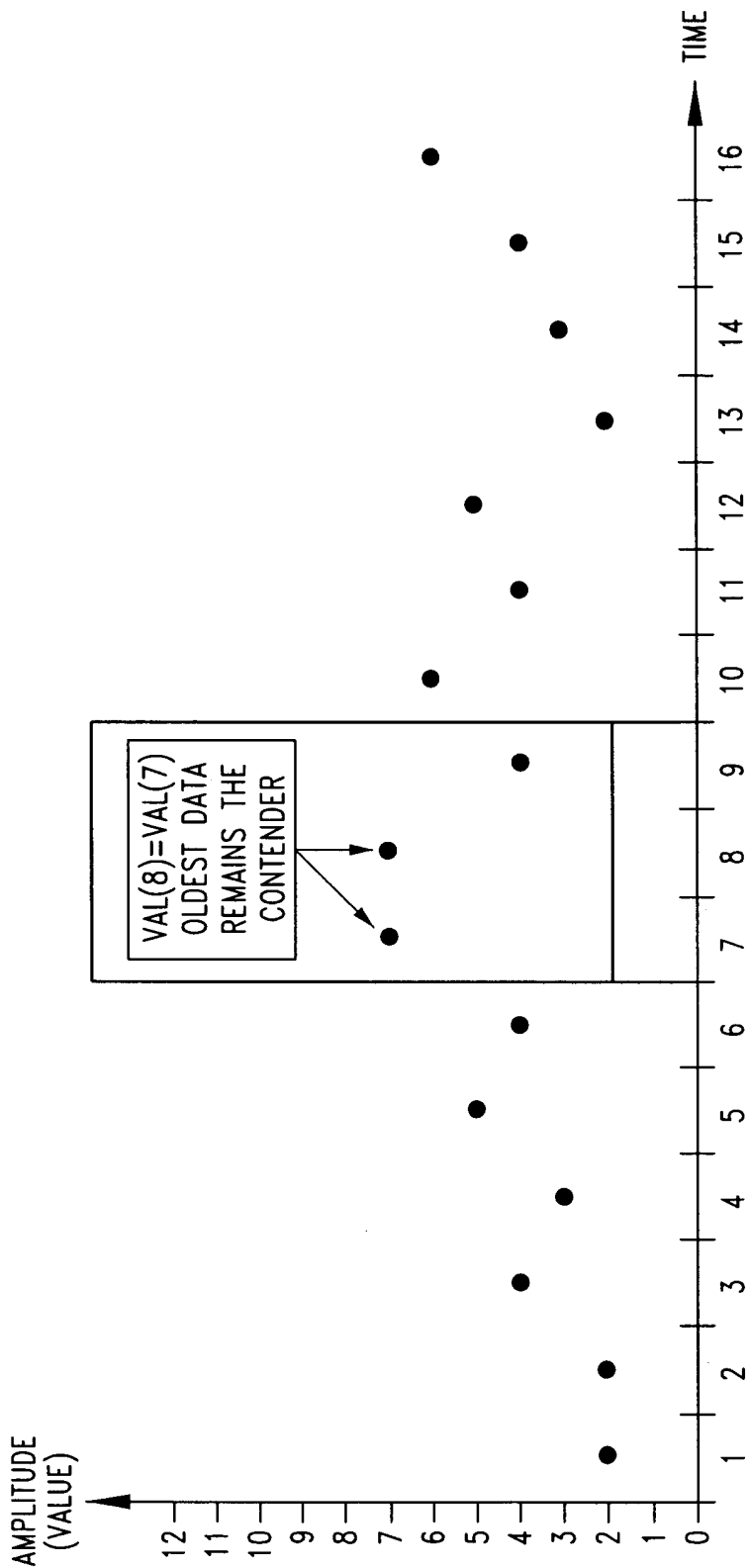


FIG. 32

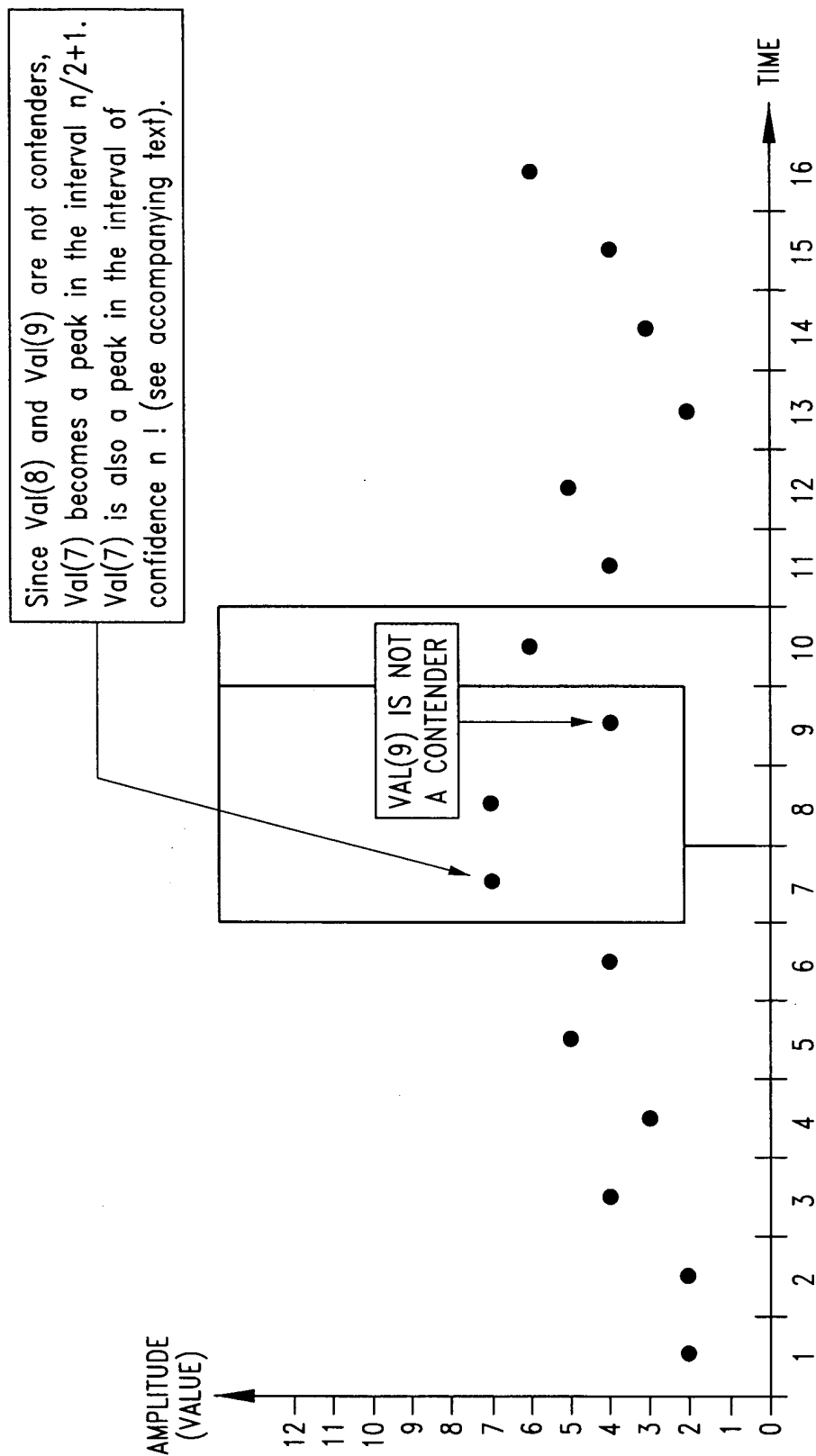


FIG. 33

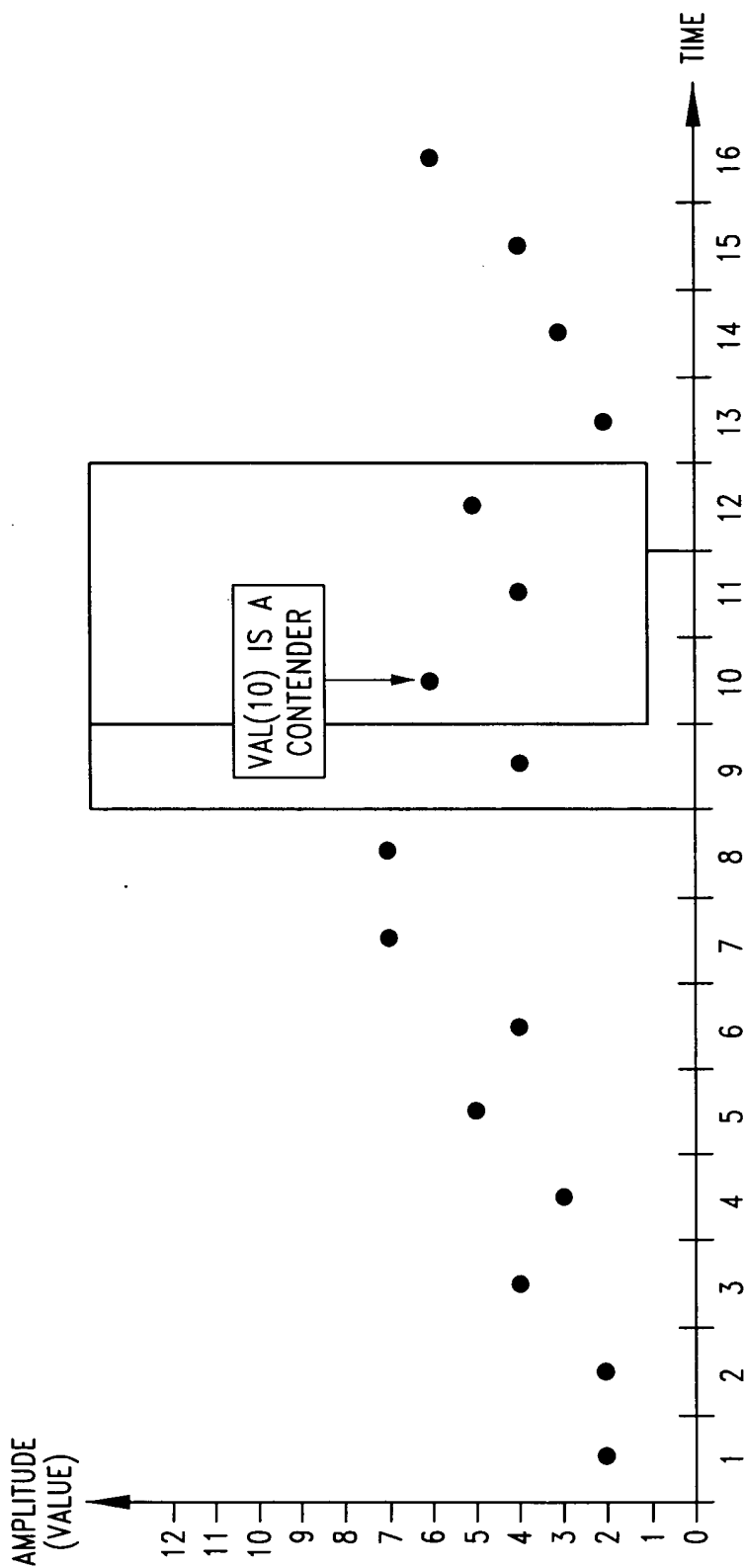


FIG. 34

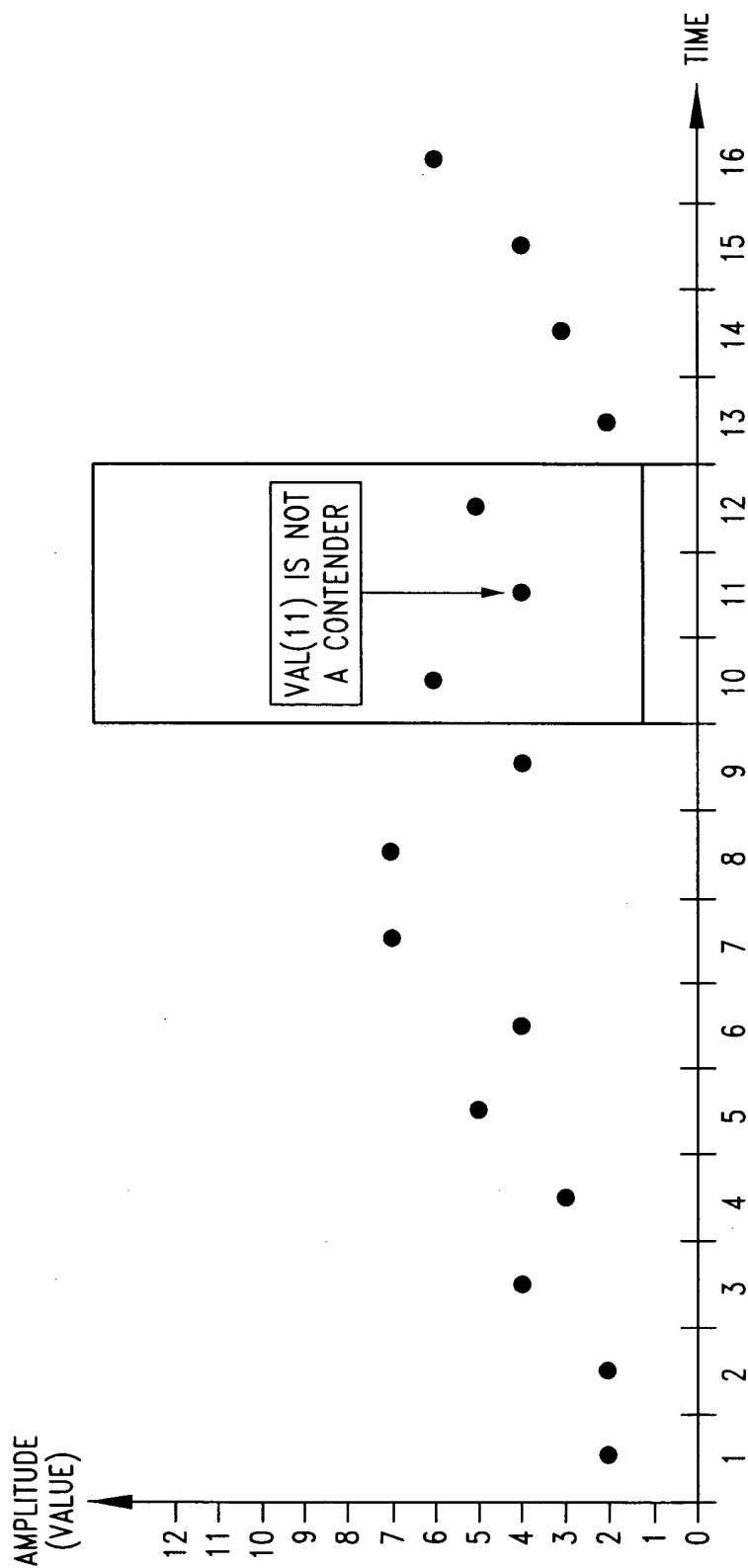


FIG. 35

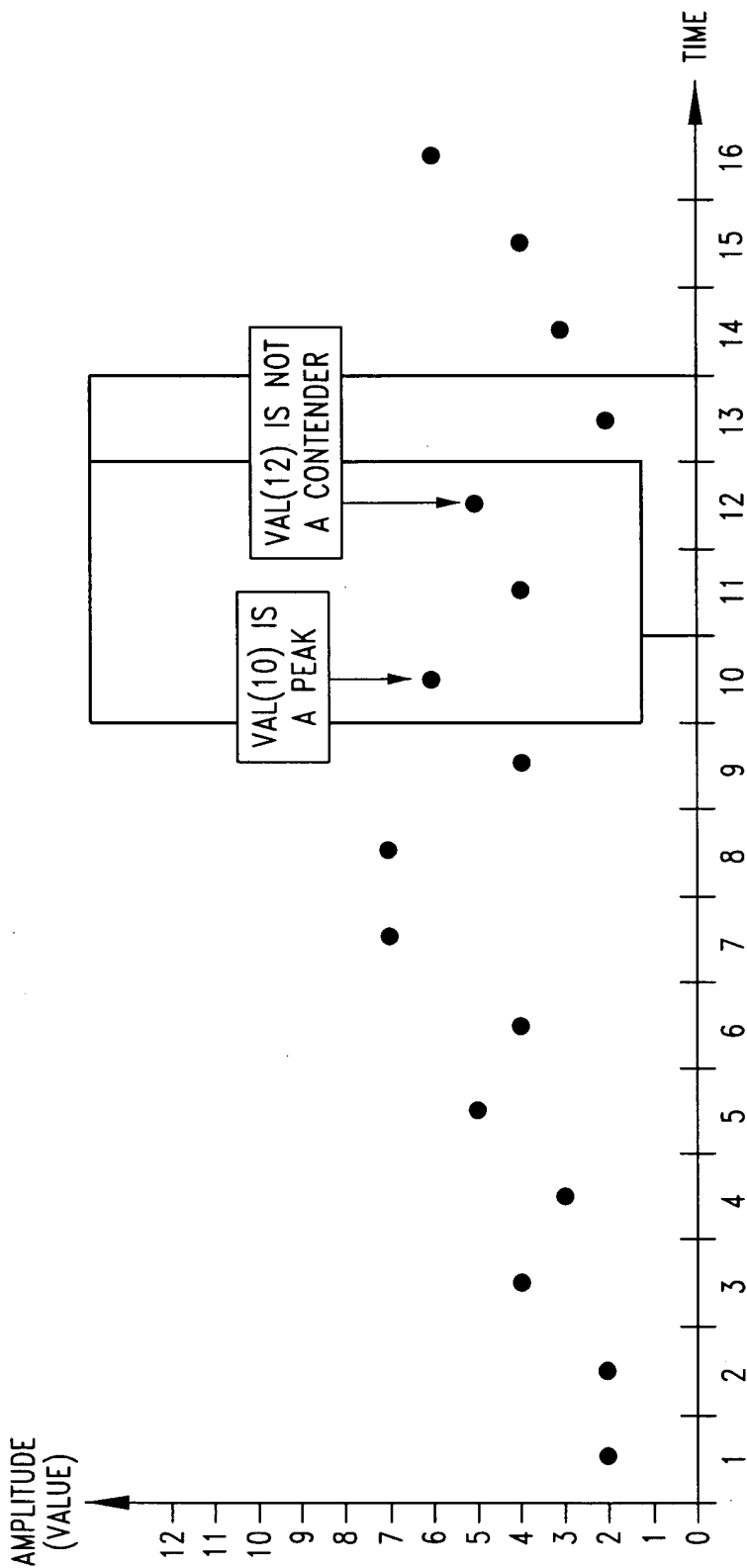


FIG. 36

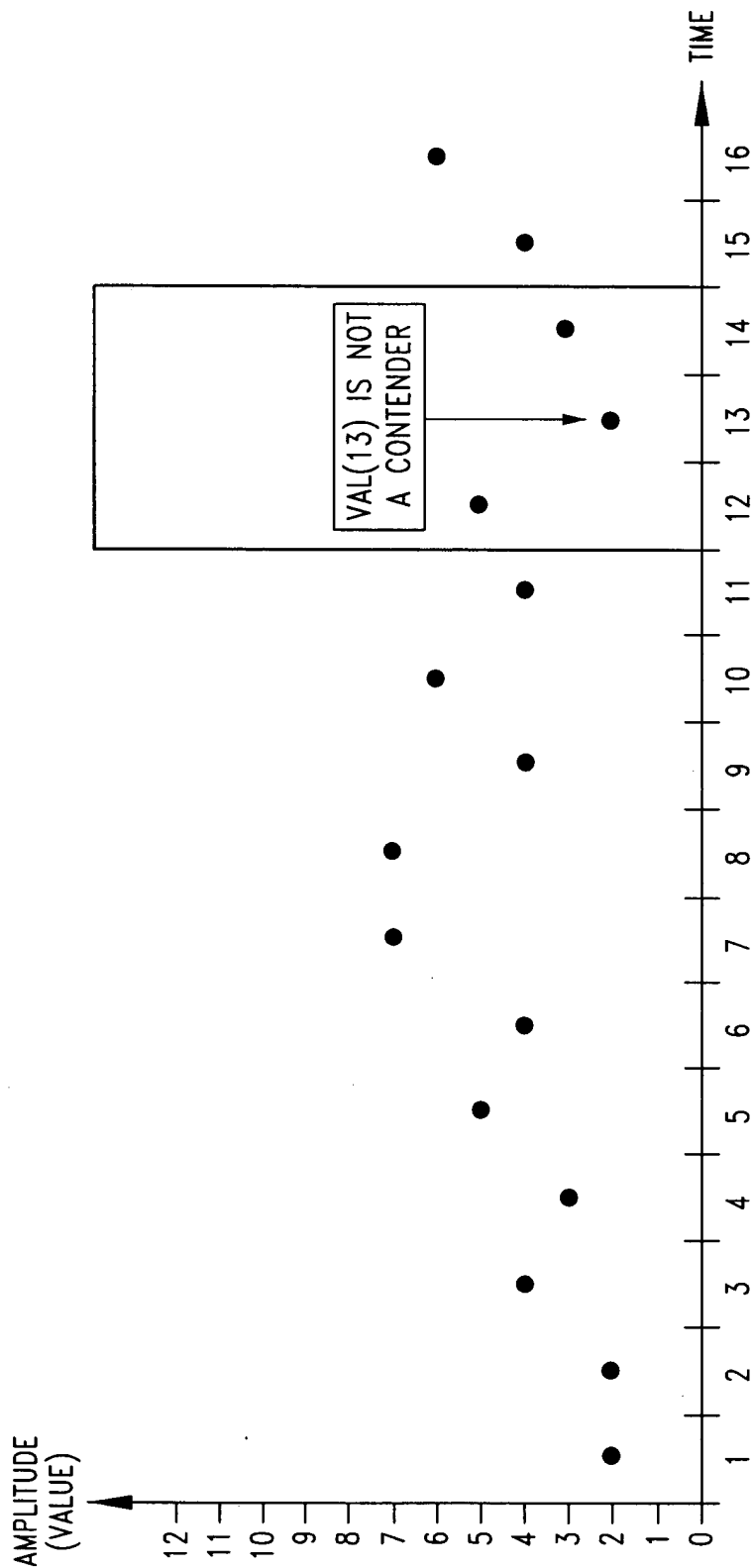


FIG. 37

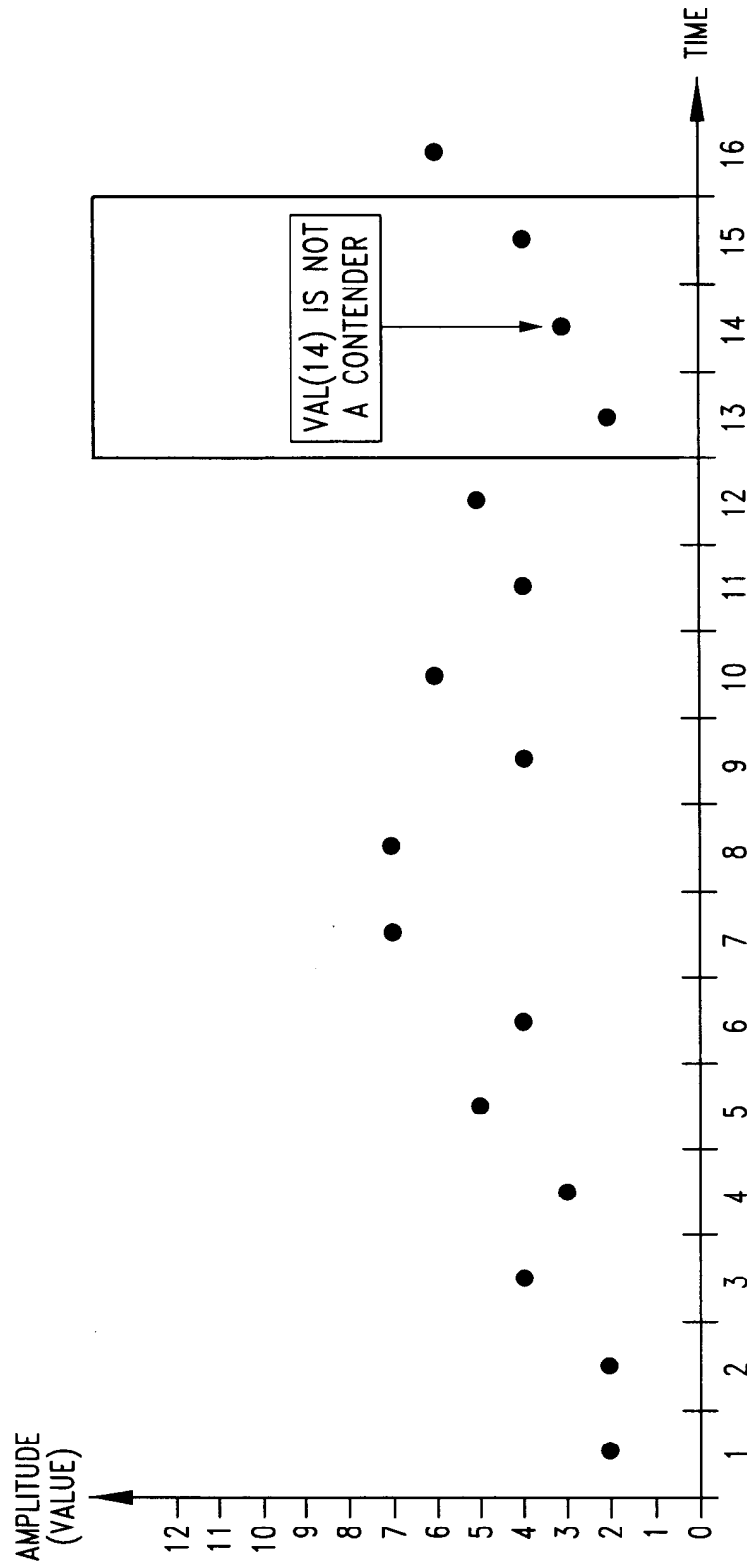


FIG. 38

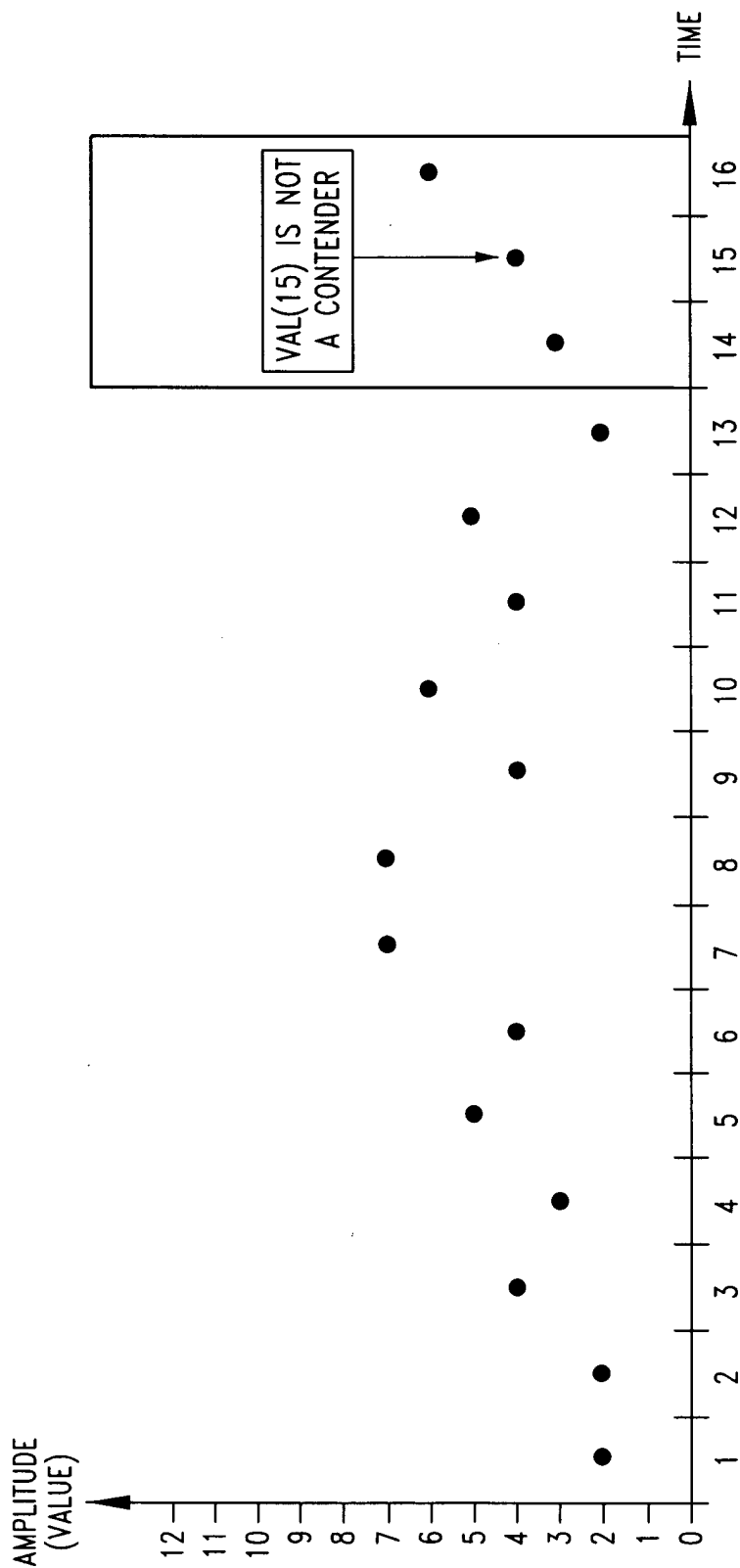


FIG. 39

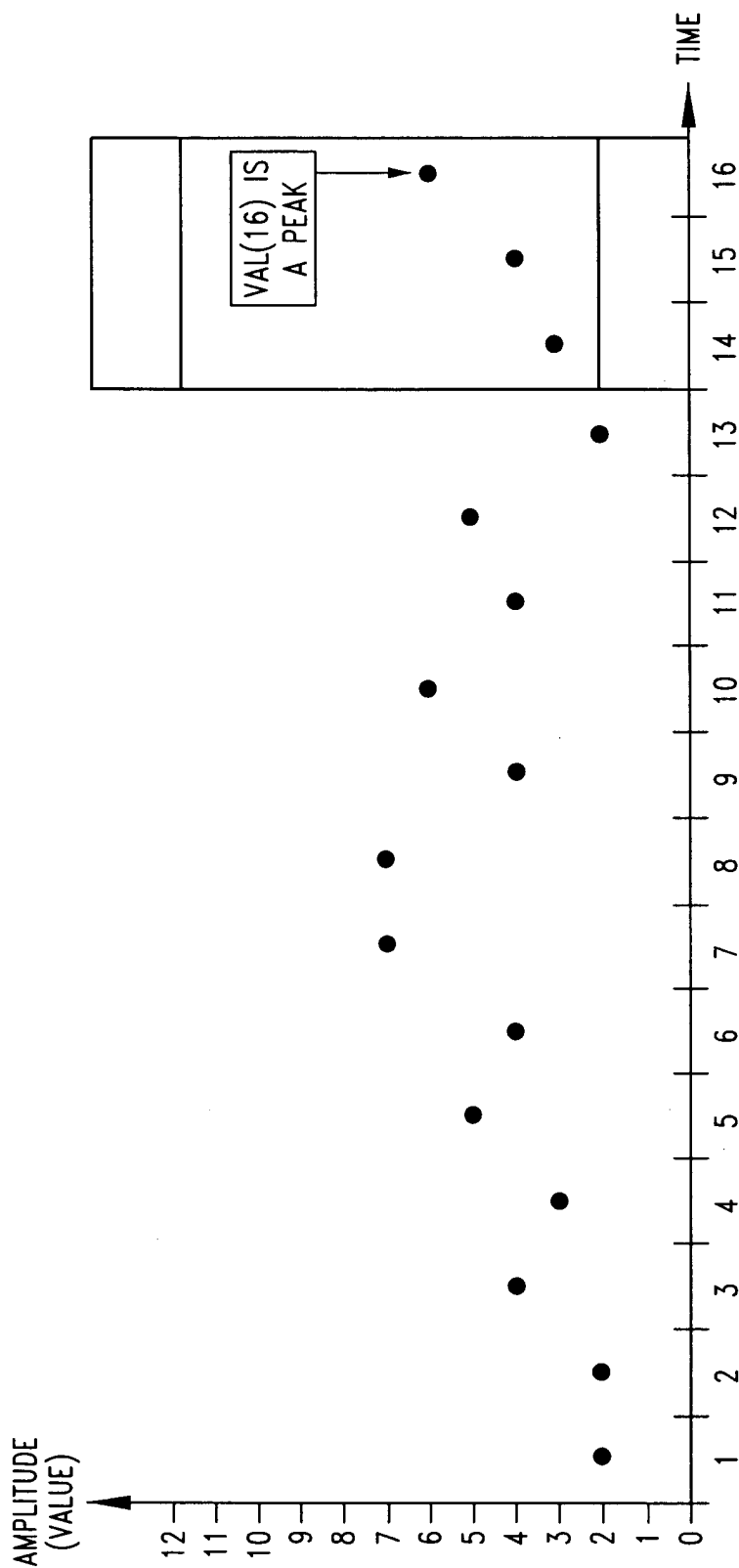


FIG. 40

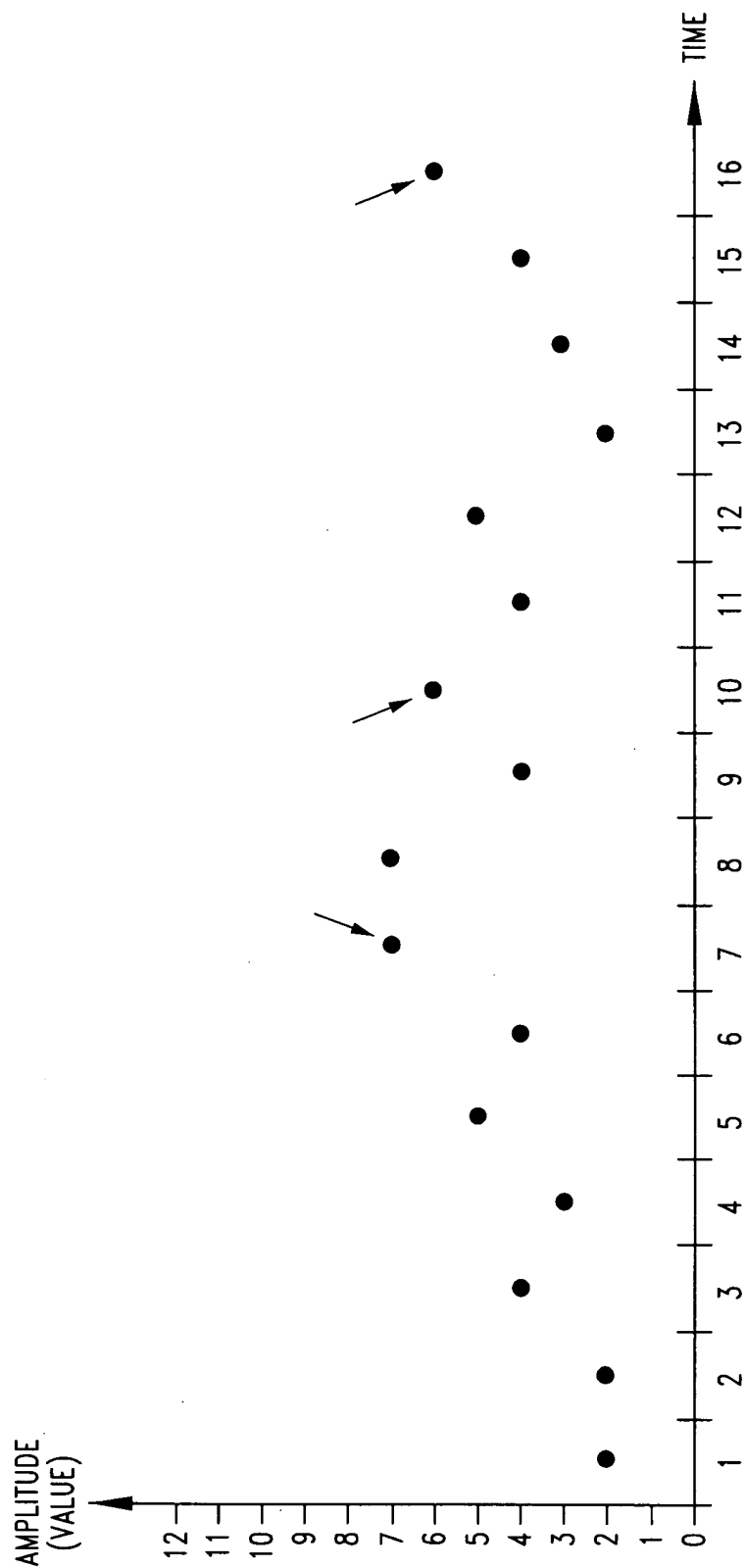


FIG. 41 Three peaks

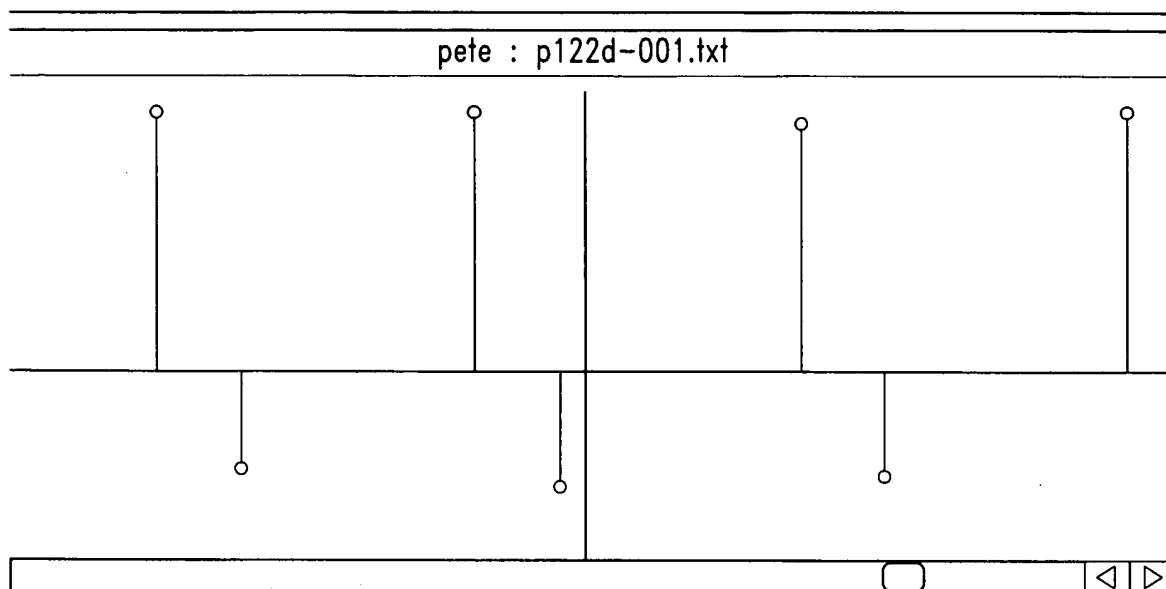


FIG. 42

Butterfly (stroke frequency 0.7 Hz). Maxima and minima are displayed.

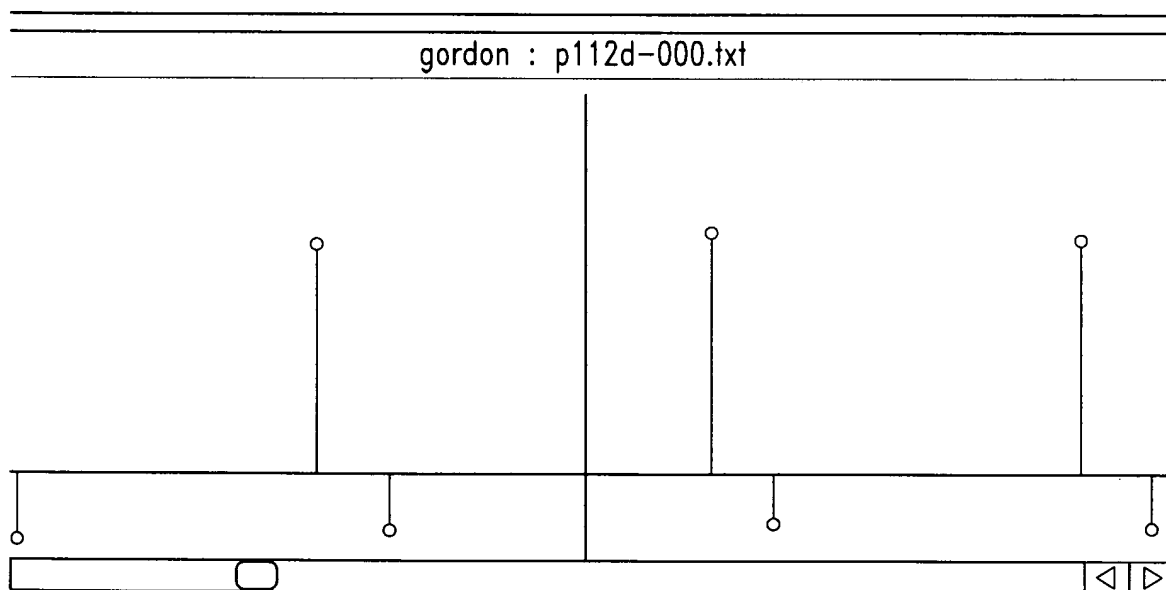


FIG. 43

Butterfly. Maxima and minima are displayed.

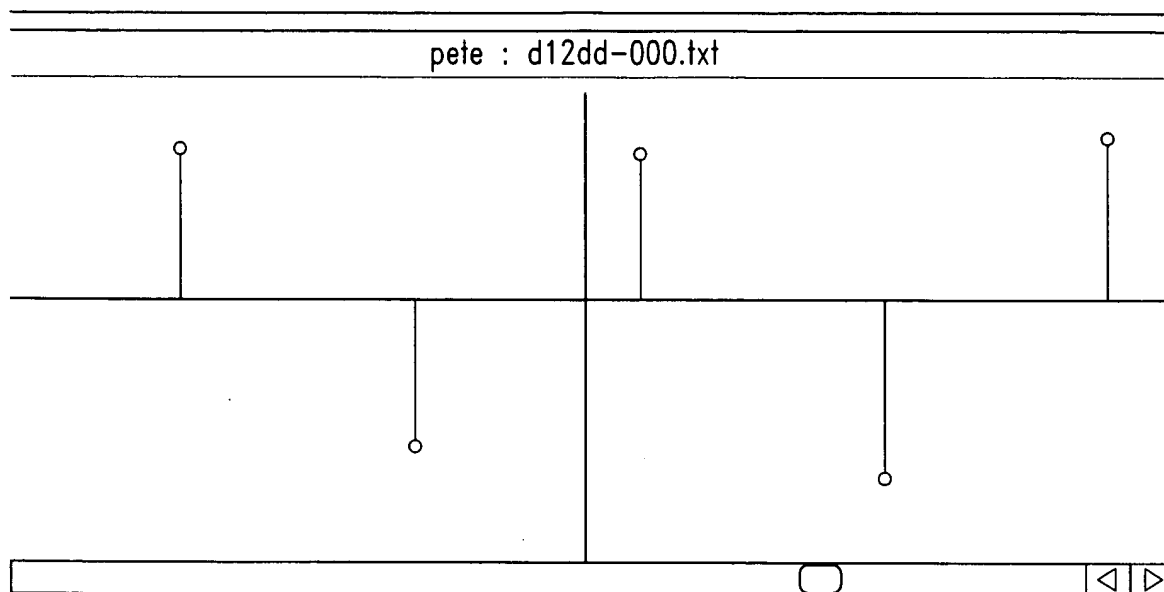


FIG. 44

Backstroke. Maxima and minima are displayed.

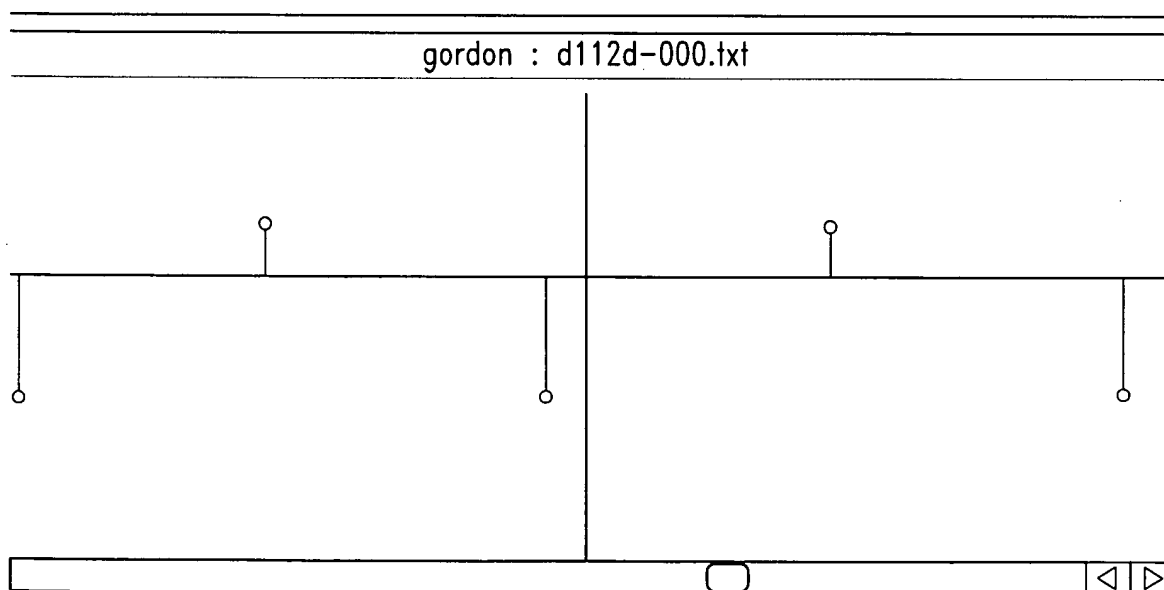


FIG. 45

Backstroke (stroke frequency 0.4Hz). Maxima and minima are displayed.

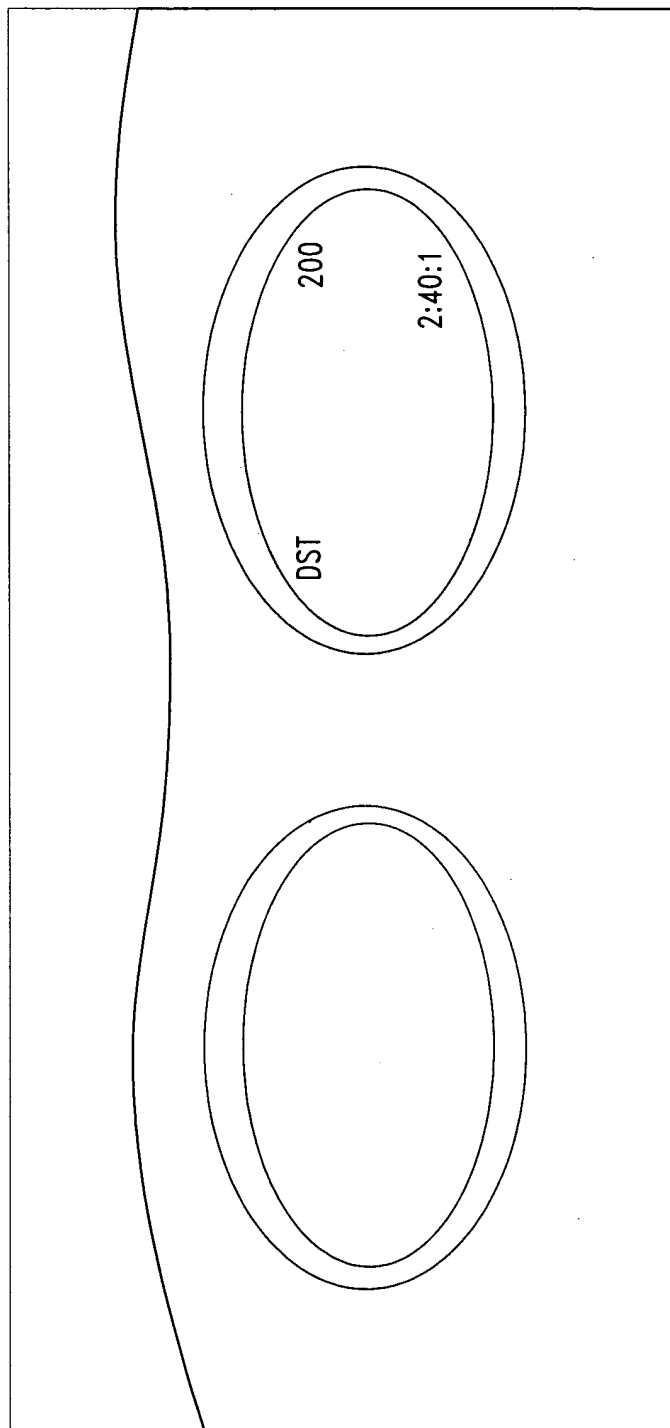


FIG. 46